



This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

### Usage guidelines

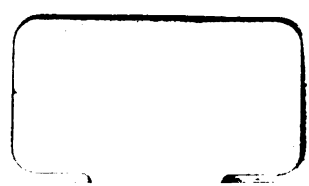
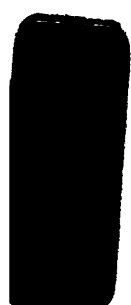
Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

- + *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.
- + *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.
- + *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.
- + *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

### About Google Book Search

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at <http://books.google.com/>











c



THE LATE MR. CROFT.

*Allard & Son, Impr.*

# SAINT THOMAS'S HOSPITAL REPORTS.

*New Series.*

EDITED BY

DR. H. G. TURNEY AND MR. W. H. BATTLE.

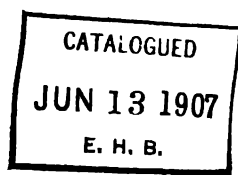
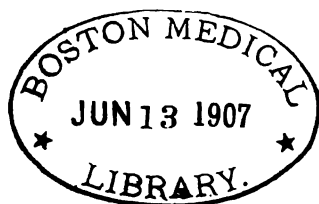


VOL. XXXIV.

L O N D O N :

J. & A. CHURCHILL, 7, GREAT MARLBOROUGH STREET.

MDCCCVI.



PRINTED BY ADLARD AND SON, LONDON AND DORKING.

# CONTENTS.

---

	PAGE
I. Medical Report, 1905. By A. MAVROGORDATO, M.A.Oxon. . . . .	3
II. Surgical Report, 1905. By CYRIL A. R. NITCH, M.S.Lond., F.R.C.S.Eng. . . . .	99
III. Report of the In-patient Department for Diseases of Women for the Year 1905. By R. H. BELL, M.A., M.B., B.C.Cantab., M.R.C.P., F.R.C.S. . . . .	373
IV. Report of the Obstetrical Department for 1905. By JOHN S. FAIRBAIRN, M.A., M.B., B.Ch.Oxon. . . . .	409
V. Statistical Report of the Ophthalmic Department for the Year 1905. By F. R. ELLISTON WRIGHT, M.B.Lond. . . . .	415
VI. Report of the Department for Diseases of the Skin, 1905. By E. STAINER, M.A., M.B., B.Ch.Oxon. . . . .	427
VII. Report of the Throat Department for the year 1905. By H. BETHAM ROBINSON, M.S.Lond. . . . .	433
VIII. Report of the Ear Department for the Year 1905. By H. J. MARRIAGE, M.B., B.S.Lond., F.R.C.S. Eng. . . . .	437
IX. Report of the Clinical Laboratory for 1905. By LEONARD S. DUDGEON, M.R.C.P.Lond. . . . .	441
X. Report of the X Ray Department, 1905. By A. H. GREG, M.A., M.B., B.C.Cantab. . . . .	443

	PAGE
XI. Report of the Physical Exercise Department for 1905. By EDRED M. CORNER, M.B.Cantab., F.R.C.S. . . . .	445
XII. Recent Additions to the Museum. By S. G. SHATTOCK, F.R.C.S. . . . .	449
XIII. Obituary—John Croft . . . . .	505
XIV. Tabular Statement of Gastro-enterostomy at St. Thomas's Hospital for the Years 1891—1905, with Remarks. By CYRIL A. R. NITCH, M.S.Lond., F.R.C.S. . . . .	509
XV. A Study of the Various Changes which occur in the Tissues in Acute Diphtheritic Toxæmia, more especially in reference to "Acute Cardiac Failure." By LEONARD S. DUDGEON, M.R.C.P.Lond. . . . .	559
XVI. The Lesions which Result from the Execution of Criminals. By EDRED M. CORNER, M.B.Cantab., F.R.C.S. . . . .	603
XVII. Dual and Distinct Fractures of the Spine. By EDRED M. CORNER, M.B.Cantab., F.R.C.S. . . . .	611
XVIII. The Regional Frequency of Fractures of the Spine. By EDRED M. CORNER, M.B.Cantab., F.R.C.S. . . . .	617
XIX. The Diagnostic Value of Cammidge's Pancreatic Reaction. By M. A. CASSIDY, M.A., M.B., B.C.Cantab. . . . .	623

## LIST OF ILLUSTRATIONS.

---

### In Memoriam :

Portrait of John Croft	.	.	<i>Frontispiece</i>
------------------------	---	---	---------------------

### WOODCUT.

#### PAGE

*Illustrating the Regional Frequency of Fractures of the Spine.*

Chart	.	.	.	.	620
-------	---	---	---	---	-----





## LIST OF SUBSCRIBERS.

---

- ABBOTT, F. C., B.Sc., M.B., M.S.Lond., F.R.C.S., The Hermitage,  
 White Hill, Bletchingley  
 ACKERLEY, R., M.A., M.B., B.Ch.Oxon., Croft House, The Hill,  
 Surbiton  
 ACLAND, H. T. D., F.R.C.S., North Belt, Christchurch, New Zealand  
 ACLAND, T. D., M.A., M.D.Oxon., F.R.C.P., 19, Bryanston Square,  
 W.  
 ALLIOTT, A. J., M.D.Cantab., The Vine, Sevenoaks  
 ANDREW, HENRY, 10, Southernhay West, Exeter  
 ARMSTRONG, H. G., St. Enodoc, Crowthorne, Berks  
 ATKEY, P. J., D.P.H.Camb., 16, Archer's Road, Southampton  
  
 BALLANCE, CHARLES A., M.S.Lond., F.R.C.S., 106, Harley Street,  
 Cavendish Square, W.  
 BALLANCE, JOHN D., 38, Hagley Road, Edgbaston, Birmingham  
 BANKS, ALFRED, F.R.C.S., West Hill Tower, Ryde, Isle of Wight  
 BARRS, A. G., M.D.Edin., F.R.C.P.Lond., 25A, Park Square, Leeds  
 BARTON, J. KINGSTON, J.P., 14, Ashburn Place, Courtfield Road,  
 Gloucester Road, S.W.  
 BASHALL, C. E., The Knowle, West Byfleet, Surrey  
 BATTLE, W. H., F.R.C.S., 49, Harley Street, Cavendish Square, W.  
 BEALE, H. R., M.D.Lond., The Square, Retford, Notts  
 BEDFORD, R. J., The Wymeshead, Kegworth, Derby  
 BENTHALL, W., M.A., M.B.Cantab., 102, Friargate, Derby  
 BERNAU, H. F., Napier, New Zealand  
 BEVAN, A., M.D.Lond., Lancaster Gate Gardens, W.  
 BEVILLE, F. W., 2, Brook Street, Bath  
 BICKLE, L. W., F.R.C.S.Edin., North Terrace, Adelaide, South  
 Australia  
 BIDWELL, L. A., F.R.C.S., 15, Upper Wimpole Street, W.  
 BLACK, KENNETH, F.R.C.S., L.D.S., General Hospital, Notting-  
 ham  
 BLAKEMAN, CHAS. J., 2, Bedford Road, Walton, near Liverpool  
 BOND, W. A., M.A., M.D.Cantab., D.P.H.Cantab., Municipal  
 Offices, 197, High Holborn, W.C.  
 BOTT, W. GIBSON, J.P., 37, Kennington Park Road, S.E.  
 BOY, C. R., B.Sc., M.D.Lond., M.R.C.P., F.R.C.S., 2, Devonshire  
 Place, Portland Place, W.  
 BRISTOWE, HUBERT C., M.D.Lond., Wrington, Somerset  
 BROCKATT, A. A., M.D.Bru.x., Hazeldean, Malvern, Worcestershire  
 BRODIE, T. G., M.D.Lond., F.R.S., 8, Hunter Street, Brunswick  
 Square, W.

- BROOK, W. F., F.R.C.S., Longlands House, Swansea  
 BROWN, FRED. GORDON, 17, Finsbury Circus, E.C.  
 BROWN, L. D., 1, Henley Villa, Ealing, W.  
 BROWNE, EDGAR A., F.R.C.S.Edin., 39, Rodney Street, Liverpool  
 BRUCE, R. M., Western Hospital, Seagrave Road, Fulham, S.W.  
 BUCKLEY, T. W., M.D., J.P., Thrapston House, Thrapston  
 BULSTRODE, H. T., M.A., M.D.Cantab., D.P.H., 4, The Mansions,  
 Earl's Court, W.  
 BUZZARD, E. F., M.A., M.D., B.Ch.Oxon., M.R.C.P., 33, Harley  
 Street, W.
- CAIGER, F. FOORD, M.D.Lond., F.R.C.P., D.P.H.Cantab., South-  
 Western Fever Hospital, Stockwell, S.W.  
 CARPENTER, ARTHUR B., M.A., M.B.Oxon., Bedford Park, Croydon  
 CARTER, WILLIAM, M.D., LL.B., F.R.C.P., J.P., 80, Rodney Street,  
 Liverpool  
 CLAPTON, EDWARD, M.D., F.R.C.P., F.R.C.S., 41, Eltham Road,  
 Lee, S.E.  
 CLAPTON, WILLIAM, F.R.C.S., St. Stephen's Road, Canterbury  
 CLUTTON, H. H., M.A., M.C.Cantab., F.R.C.S., 2, Portland Place,  
 W.  
 COLBY, WM. TAYLOR, M.D., J.P., The Mount, Malton, Yorkshire  
 COLMAN, W. S., M.D.Lond., F.R.C.P., 9, Wimpole Street, W.  
 COOK, S. B., M.D.Lond., Askam-in-Furness, Lancashire  
 COPELAND, W. H. LAWRENCE, M.A., M.D., B.C.Cantab., 4, Bolton  
 Gardens, S. Kensington, S.W.  
 CORNER, E. M., M.A., M.B., M.C.Cantab., B.Sc.Lond., F.R.C.S.,  
 37, Harley Street, W.  
 COULTER, W., M.D., M.Ch., R.U.I., 2/2, Harington Street, Cal-  
 cutta, India  
 COX, ALFRED E., The Platts, Watford, Herts  
 CROSBY, Alderman T. B., M.D., F.R.C.S., J.P., 19, Gordon Square,  
 W.C.  
 CROWDY, F. D., M.A., M.D.Oxon., Belvedere House, Torquay  
 "CROYDON MEDICAL READING SOCIETY," per E. H. Willock, Esq.,  
 113, London Road, Croydon  
 CULLINGWORTH, C. J., M.D., Hon. D.C.L.Durb., Hon. LL.D.Aberd.,  
 F.R.C.P., 14, Manchester Square, and Mount View, 34, Frant  
 Road, Tunbridge Wells
- DAVIS, ROBERT, Darrickwood, Orpington, Kent  
 DENNE, T. V. DE, Sidlands Lodge, Sidmouth  
 DUFF, J., M.D.Glasg., M.R.C.P., 5, Abbey Street, Abbey Square,  
 Chester  
 DUNN, J. E., J.P., 25A, Winckley Square, Preston, Lancashire  
 DYBALL, B., M.B., B.S.Lond., F.R.C.S., 47, Queen Street, Exeter
- EVELYN, W. A., M.A., M.D.Cantab., 24, Micklegate, York

FAIRBAIRN, J. S., M.A., M.B., B.Ch.Oxon., M.R.C.P., F.R.C.S., 60,  
Wimpole Street, W.

FAWSSETT, FRANK, M.B., B.S.Lond., 83, High Street, Lewes

FELL, W., M.D.Oxon., Wellington, New Zealand

FINCHAM, W. SYDNEY, 53, Kew Bridge Road, Brentford, Middlesex

FISHER, J. H., M.B., B.S.Lond., F.R.C.S., 83, Wimpole Street, W.

FOXWELL, ARTHUR, M.A., M.D.Cantab., F.R.C.P., 47, Newhall  
Street, Birmingham

FRANKLIN, G. C., F.R.C.S., 39, London Road, Leicester

GATES, E. A., M.D.Lond., *via* Palestro (A) Florence, Italy

GEEVIS, HENRY, M.D., F.R.C.P., J.P., Hillingdon Heath, Uxbridge

GRAHAM, J. C. W., M.A., M.B., B.C.Cantab., 32, Gwydir House,  
Mill Road, Cambridge

GRANT-WILSON, C. W., St. Winnows, Bromley, Kent

GREEN, C. D., M.D.Lond., F.R.C.S., The Ferns, South Street,  
Romford, Essex

GREG, A. H., B.A., M.B., B.C.Cantab., F.R.C.S., 16, West Halkin  
Street, Belgrave Square, S.W.

GROOME, W. W., M.D.Cantab., Suffolk House, Maple Road, Surbiton

GROSE, S., M.D., F.R.C.S., Bishop's Teignton, Teignmouth

HALL, J. B., M.A., M.B., M.C.Cantab., F.R.C.S.E., 31, Manning-  
ham Lane, Bradford, Yorks

HARLEY, JOHN, M.D., F.R.C.P., F.L.S., Beedings, Pulborough,  
Sussex

HARPER, J. R., Bear Street, Barnstaple, Devon

HARTLEY, HORACE, Stone, Staffordshire

HASLAM, W. F., F.R.C.S., 54, Newhall Street, Birmingham

HAWKINS, H. P., M.A., M.D.Oxon., F.R.C.P., 56, Portland Place,  
W.

HAYDON, T. H., B.A., M.B., B.C.Cantab., Marlborough, Wilts

HELSHAM, HUGH PAUL, Beccles, Suffolk

HINNELL, J. SQUIER, B.A., M.D.Cantab., 62, Garland Street, Bury  
St. Edmunds

HOBHOUSE, E., M.A., M.D., B.Ch.Oxon., F.R.C.P., 12, Second  
Avenue, Hove, Sussex.

HOLBERTON, H. N., M.D., Palace Road, East Molesey

HOUGH, C. H., The Cottage, Clappersgate, Ambleside

HUNTERIAN SOCIETY, London Institution, Finsbury Circus, E.C.

HUTTON, H. R., M.A., M.B.Cantab., 16, St. John Street, Manchester

JOHNSTON, G. D., Georgia Street, Vancouver, British Columbia

JONES, EVAN, J.P., Ty-mawr, Aberdare, Glamorganshire

JONES, SYDNEY, M.B., F.R.C.S., 97, Louisville Road, Upper  
Tooting, S.W.

LAWFORD, J. B., M.D., C.M., F.R.C.S., 99, Harley Street, W.

LEATHES, J. B., M.B., B.Ch.Oxon., F.R.C.S., 89, Albert Bridge  
Road, Battersea, S.W.

LEEDS AND WEST RIDING MEDICO-CHIRURGICAL SOCIETY, per  
J. E. Eddison, M.D., 6, Park Square, Leeds

LEES, JOSEPH, M.D., 21, Brixton Road, S.W.

LEICESTER, W. S., St. Thomas's Hospital, S.E.

LE SUEUR, H. R., D.Sc.Lond., St. Thomas's Hospital, S.E.

LOCK, J. L., M.A., M.B., B.C.Cantab., 64, St. Andrews, Uxbridge

LOW, HAROLD, M.A., M.B., B.C.Cantab., 10, Evelyn Gardens,  
South Kensington, S.W.

LUNGEGAARDS HOSPITALET BIBLIOTHEK, per H. G. Dethloff,  
Bergen, Norway

LYNCH, G. W. A., B.A., M.B., B.C.Cantab., J.P., Suva, Fiji

MACEVOY, H. J., M.D.Lond., 41, Buckley Road, Brondesbury, N.W.

MACKENZIE, H. W. G., M.A., M.D.Cantab., F.R.C.P., 34, Upper  
Brook Street, W.

MAKINS, G. H., C.B., F.R.C.S., 47, Charles Street, Berkeley  
Square, W.

MARRIAGE, H. J., M.B., B.S.Lond., F.R.C.S., 109, Harley Street,  
W.

MARRINER, W. H. LISTER, M.B.Lond., Craig Vaen, Poole Road,  
Bournemouth

MAVROGORDATO, A., B.A.Oxon., St. Thomas's Hospital, S.E.

MAYBURY, A. V., M.D., Ashford House, Mile End, Landport

MCCLEAN, J. F., British Seamen's Hospital, Constantinople

MENNELL, Z., 1, Royal Crescent, Notting Hill, W.

MERRY, W. J. C., M.A., M.D., B.Ch.Oxon., 2, Chiswick Place,  
Eastbourne

MILLER, F. MONTAGUE, J.P., Northolme, High Road, Upper  
Clapton, N.E.

MILLS-ROBERTS, R. H., C.M.G., F.R.C.S.Edin., Bodavon, Llanberis,  
N. Wales

MORRIS, C. K., J.P., Gordon Lodge, Charlton Road, Blackheath,  
S.E.

NAIEN, R., F.R.C.S., Hastings, New Zealand

NEATE, CHAS. P. WETHERELL, F.R.C.P., F.R.C.S.E., Stilton, 15,  
London Road, Forest Hill, S.E.

NELSON, W. E., M.A.Cantab., Green Gates, Henley-in-Arden

NETTLESHIP, E., F.R.C.S., Nutcombe Hill, Shotter Mill, Haslemere

NEWINGTON, A. S. L., M.B.Cantab., Woodlands, Ticehurst, Sussex

NEWSHOLME, A., M.D.Lond., F.R.C.P., 11, Gloucester Place,  
Brighton

NICHOL, F. E., M.A., M.B.Cantab., 1, Ethelbert Crescent, Margate

NICHOLSON, T. G., M.B., B.Sc.Lond., Palmers, Great Marlow

NORRIS, E. S., M.A., M.B.Cantab., 117, High Street, Eton

ORANGE, W., C.B., M.D., F.R.C.P., Oakhurst, Godalming

ORD, W. W., M.A., M.D., B.Ch.Oxon., M.R.C.P., The Hall,  
Salisbury

- PALIN, E. W., M.A., M.B., B.Ch.Oxon., The Oaks, Fakenham,  
Norfolk
- PANIOTY, J. E., 19, Royd Street, Calcutta
- PABSONS, F. G., F.R.C.S., 2, Guibal Road, Lee, S.E.
- PATCH, H. H. L., 17, Castle Street, Hertford
- PAYNE, J. F., M.D., F.R.C.P., Lyonsdown House, New Barnet,  
Herts
- PERKINS, J. J., M.A., M.B., B.C.Cantab., 8, Mansfield Street, W.
- PERN, ALFRED, F.R.C.S., D.P.H., Botley, Southampton
- PHELPS, A. M., M.A., M.D.Cantab., 37, Compton Terrace, High-  
bury, N.
- PILCHER, C. W., B.A.Oxon., Boston, Lincs
- PITTS, BERNARD, M.A., M.C.Cantab., 109, Harley Street, W.
- PLANCK, C., M.A.Cantab., County Asylum, Haywards Heath,  
Sussex
- PEAIN, J. L., M.D., F.R.C.S., English Hospital, Casilla, 1213,  
Valparaiso, Chili, South America
- PRINGLE, A. Y., 64, St. Matthew's Street, Ipswich
- PUEVIS, JOHN P., 38, Royal Hill, Greenwich, S.E.
- PUEVIS, W. P., M.D., M.S., B.Sc.Lond., F.R.C.S., 14, Carlton  
Crescent, Southampton
- RAYNER, H., M.D., Upper Terrace House, Hampstead, N.W.
- REDPATH, W., M.B.Lond., Woodbridge, Suffolk
- REID, R. W., M.D.Aberd., F.R.C.S., 37, Albyn Place, Aberdeen
- RENDLE, G., St. Thomas's Hospital, S.E.
- RICHARDSON, J. C. RYDER, M.A., M.B., B.C.Cantab., Saxmundham,  
Suffolk
- RICHARDSON, S. W. F., M.B., B.S.Lond., F.R.C.S., Board of Exe-  
cutors' Chambers, Wale Street, Capetown, S. Africa
- ROBINSON, H. B., M.D., M.S.Lond., F.R.C.S., 1, Upper Wimpole  
Street, W.
- ROBINSON, WILLIAM H., Mount Road, Fleetwood, Lancs
- ROCKLIFFE, W. C., M.A., M.D., 17, Charlotte Street, Hull
- ROSSITER, GEORGE F., M.B.Lond., Cairo Lodge, Weston-super-  
Mare
- RUDALL, JAMES T., F.R.C.S., 57, Collins St., Melbourne, Australia
- RUSSELL, A. E., M.D., B.S.Lond., M.R.C.P., 9, Wimpole Street,  
W.
- SANDWITH, F. M., M.D.Durh., F.R.C.P., 31, Cavendish Square
- SANSOM, H. A., M.D.Lond., The Glen, 127, West End Lane, West  
Hampstead, N.W.
- SARGENT, P. W. G., M.A., M.B., B.C.Cantab., F.R.C.S., 67A, Harley  
Street, W.
- SAUNDERS, H. W., M.B., F.R.C.S., 3, Silverdale Road, East-  
bourne
- SAWYER, J. E. H., M.A., M.D., B.Ch.Oxon., M.R.C.P., 93, Corn-  
wall Street, Birmingham

- SEATON, EDWARD C., M.D.Lond., F.R.C.P., 93, St. George's Square, S.W.
- SEDGWICK, C. H., M.A., M.B., B.C.Cantab., Neville House, Weedon, Northants.
- SEDGWICK, JAMES, M.D., J.P., The Firs, Copse Hill, Wimbledon, S.W.
- SEMON, Sir FELIX, C.V.O., M.D., F.R.C.P., 39, Wimpole Street, W.
- SHARKEY, SEYMOUR J., M.A., M.D., F.R.C.P., 22, Harley Street, W.
- SHATTOCK, S. G., F.R.C.S., St. Thomas's Hospital, S.E.
- SHAW, JOHN, M.D.Lond., 32, New Cavendish Street, W.
- SHEARER, D. F., B.A., M.B., B.Ch.Oxon., F.R.C.S., 48, Upper Richmond Road, Putney, S.W.
- SHEERINGTON, C. S., M.A., M.D., F.R.S., 16, Grove Park, Liverpool
- SIKES, A. W., M.D., B.S., B.Sc.Lond., M.R.C.P., F.R.C.S., 57, Wimpole Street, W.
- SIMPSON, H., B.A., M.B., B.C.Cantab., Church House, Branchley, Kent
- SMITH, FREDERICK W., 40, Newington Causeway, S.E.
- SMITH, R. PERCY, M.D., F.R.C.P., 36, Queen Anne Street, W.
- SMYTH, H. J., New Road, South Molton, North Devon
- SOLLY, R. V., M.D.Lond., F.R.C.S., 40, West Southernhay, Exeter
- SOUTH, R. E., J.P., Church Close, Boston, Lincolnshire
- SOUTHERN, J. ACTON, 93, Friargate, Derby
- STAINER, E., M.A., M.B., B.Ch.Oxon., M.R.C.P., 60, Wimpole Street, W.
- STAVELEY, W. H. C., F.R.C.S., 24, Sloane Gardens, S.W.
- STEWART, CHARLES, LL.D., F.R.S., Royal College of Surgeons, W.C.
- STILWELL, G. R. F., M.B.Lond., 14, Southend Road, Beckenham, Kent
- STRASSBURG IMPERIAL UNIVERSITY LIBRARY (Alsace)
- SUTCLIFFE, P. T., B.A., M.B., B.C.Cantab.
- SUTCLIFFE, W. G., F.R.C.S., 7, Dalby Square, Margate
- SUTTON, Rev. S. W., M.D., B.S.Lond., Sandown, Isle of Wight.
- SUZUKI, S., Medical Department, Japanese Navy, Tokio, Japan
- SWALLOW, ALLAN J., M.B., B.S., 61, South Side, Clapham Common, S.W.
- SYMONS, R. FOX, D.P.H., 95, Cromwell Road, S.W.
- TAKAKI, Baron KANEHIRO, F.R.C.S., Tokio, Japan
- TATE, W. W. H., M.D.Lond., F.R.C.P., 32, Queen Anne Street, W.
- THOMPSON, G. W., B.A., M.D., B.C.Cantab., 6, West Street, Scarborough
- THORP, H. C., M.A., M.B., B.C.Cantab., Clifton Green, York
- THURSTON, E. O., M.B., B.S.Lond., F.R.C.S., Capt. I.M.S., 27, Panton Street, Haymarket, S.W.
- TONKING, J. H., M.B.Lond., Camborne, Cornwall
- TREVES, W. KNIGHT, F.R.C.S., 32, Dalby Square, Margate

TRUMAN, C. E., M.A.Cantab., 23, Old Burlington Street, W.  
TURNER, J. G., F.R.C.S., L.D.S., 59, Wimpole Street, W.  
TURNER, H. G., M.A., M.D.Oxon., F.R.C.P., 68, Portland Place, W.  
TYRELL, W., 104, Cromwell Road, South Kensington, S.W.

UMNEY, W. F., M.D.Lond., Eardley House, 81, Lawrie Park Road,  
Sydenham, S.E.  
USHER, C. H., B.A., M.B., B.C.Cantab., F.R.C.S.Edin., 3, Bon  
Accord Square, Aberdeen

WADD, FREDERICK J., M.B., C.M., Burvale, Richmond Hill, Surrey  
WAGSTAFFE, W. W., B.A., F.R.C.S., Cotswold, Dartford Road,  
Sevenoaks

WALLACE, A. C., 1, Grange Terrace, The Grange, Guernsey  
WALLACE, C. S., M.B., B.S.Lond., F.R.C.S., 26, Upper Wimpole  
Street, W.

WALTERS, F. R., M.D.Lond., M.R.C.P., F.R.C.S., Crooksbury Sana-  
torium, Farnham, Surrey

WARD, FRED. HENRY, 37, The Park, Ealing, W.

WEBBER, W. W., Crewkerne, Somerset

WHITE, E. F., F.R.C.S., Westlands, 388, Upper Richmond Road,  
Putney, S.W.

WILLIAMS, H. BOWEN, M.D.BruX., 78, Lewisham High Road, S.E.  
WRIGHT, E. H., Major I.M.S., c/o Messrs. King and Co., 9,  
Pall Mall, S.W.

YORK MEDICAL SOCIETY, 1, Low Ousegate, York

*In order to facilitate the safe transmission of the 'St. Thomas's Hospital Reports,' it is particularly requested that the attention of the Editors be directed to any inaccuracies in the above list of Subscribers.*

## EXCHANGE AND COMPLIMENTARY LIST.

St. Bartholomew's Hospital Reports  
St. George's Hospital Reports  
Guy's Hospital Reports  
King's College Hospital Reports  
London Hospital Reports  
Westminster Hospital Reports  
Transactions of the Clinical Society of London  
Transactions of the Medical Society of London  
Transactions of the Obstetrical Society of London  
Royal College of Physicians, London  
Royal College of Surgeons, England  
Library of British Medical Association, 429, Strand, W.C.  
The Journal of the Pharmaceutical Society of Great Britain  
Bristol Medico-Chirurgical Journal (Dr. Watson Williams, Medical School, Bristol)  
Le Progrès Médical (Dr. Bourneville, 6, Rue des Écoles, Paris)  
American Journal of the Medical Sciences (Lea Brothers & Co., 706, Sansom Street, Philadelphia). (Exchange Copy)  
Transactions of the New York Academy of Medicine, 17, 19, 21, West Forty-third Street, New York. (Exchange Copy)  
The Johns Hopkins Hospital Reports, Baltimore, U.S.A.  
Royal College of Surgeons, Dublin (The Librarian)  
Parkes Museum (Hon. Sec.), 74A, Margaret Street, W.  
Tokyo Medical Library, Kyobashiku, Japan  
Senatus Academicus, University of Edinburgh  
College of Physicians, Philadelphia  
Harvard University, Medical School, Boston, Mass.  
University of Toronto (The Library)  
McGill University, Montreal (The Library, Faculty of Medicine)  
University of Brussels (The Library)  
University of Berlin (The Library)  
Medical and Surgical Review of Reviews, 66, Finsbury Pavement, E.C.  
International Medical Magazine, per Messrs. Treat & Co., 241, West Twenty-third Street, New York. (Marked "Exchange Copy")  
West London Medical Journal  
The Laboratory, Claybury, Woodford, Essex  
Pathological Laboratory, The University, Liverpool  
Journal of Medical Research (Editorial Office, 240, Longwood Avenue, Boston, Mass., U.S.A.). (Marked "Exchange Copy")  
School of Medicine, Cairo (The Director)

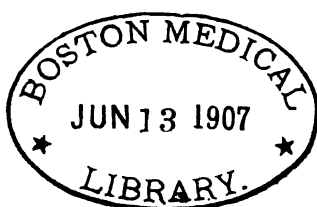


## GENERAL REPORT.

---

	Males.	Females.	Total.
Number of patients in Hospital, Jan. 1st, 1905 . . .	239	183	422
„ „ admitted during 1905 . . .	3618	2833	6451
	<u>3857</u>	<u>3016</u>	<u>6873</u>
Number of patients discharged during 1905 . . .	3221	2582	5803
„ „ who died during 1905 . . .	365	232	597
„ „ in Hospital, Dec. 31st, 1905 . . .	264	209	473
	<u>3850</u>	<u>3023</u>	<u>6873</u>
Total mortality . . . . .		9.8 per cent.	
Average duration of each patient's stay in Hospital . . .		26.2 days.	





# MEDICAL REPORT.

1905.

By A. MAVROGORDATO, M.A. Oxon.,

MEDICAL REGISTRAR.

TABLE I.—*General Medical Statement.*

	Males.		Females.		Total.
Number of patients discharged during 1905 . .	835	...	634	...	1469
„ „ who died during 1905 . .	203	...	121	...	324
	<u>1038</u>		<u>755</u>		<u>1793</u>

TABLE II.—*General*

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
I. GENERAL DISEASES.																						
Measles . . . . .	6	1	1	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Chicken pox . . . . .	7	2	3	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...		
Scarlet fever . . . . .	19	5	...	...	...	...	...	...	1	...	...	...	3	...	...	1	...	...	...	...		
Mumps . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		
Influenza . . . . .	23	...	...	...	...	...	...	...	5	1	...	...	5	10	...	1	1	...	...	...		
Enteric . . . . .	15	...	...	...	3	...	...	3	1	...	...	2	1	...	1	1	...	...	...	...		
Diphtheria . . . . .	42	11	8	3	9	2	2	1	1	1	1	...	1	2	...	...	1	...	...	...		
Febricula . . . . .	17	3	...	...	1	2	...	6	...	...	...	1	2	...	...	1	...	...	...	...		
Pertussis . . . . .	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Malaria . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...		
Septicæmia . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Pyæmia . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...		
Syphilis . . . . .	3	...	...	...	1	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...		

Table of Diseases.

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												2	1	1	2	All morbilli: fatal cases all broncho-pneumonia. For 1 case of Rötheln see under Appendicitis.
												2	5	...	3	3 transferred from Surgical side, 2 admitted for burns, and 1 for talipes. 2 members of Nursing Staff.
												7	8	...	5	5 transferred from Surgical side. 3 members of Nursing Staff. All cases aseptic.
													1	...	...	Member of Nursing Staff.
												11	12	...	1	1 case of abdominal type severe, rest mild mostly starting with tonsillitis.
1	...	...	...	1	...	1	...					11	2	1	1	See Special Abstract.
												15	13	4	10	See Special Abstract.
1	...	...	...									13	4	...	...	Blood examined for Widal's reaction in 6 cases; negative in all. 1 case in S. T. H. for acute nephritis in 1904 had no albuminuria during present admission.
															...	For other cases see under Broncho-pneumonia and Acute Nephritis.
												1	...	...	...	Malaria in 1902; post-malarial cachexia, no parasites seen.
		1	...											1	...	Had been exposed to infection from glanders, <i>Bacillus mallei</i> not obtained, and no positive evidence. P.M.—Some of the cultures suggested Vincent's organism. "Vincent's stomatitis" very rife in Lambeth in a mild form during the past year.
														1	...	Arose in connection with acute necrosis of ulnar; ulcerative endocarditis.
												1	2	...	2	2 cases congenital, 1 of which suggested tuberculous peritonitis, but improved greatly on anti-syphilitic treatment. For other cases see Laryngitis and Meningitis.

TABLE II—

DISEASE.	Age.	0—			5—			10—			20—			30—						
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.			
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.	
I. GENERAL DISEASES—continued.																				
Acute rheumatism . . .	88	...	...	...	...	7	6	...	...	23	15	...	...	11	9	...	...	4	3	...
Chronic rheumatism . . .	6	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	2	...	...	
Osteo-arthritis . . .	5	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	1	1	...	
Gonorrhoeal rheumatism . . .	2	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	
Gout . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	
Rickets . . . . .	3	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Diabetes . . . . .	18	...	...	...	...	...	...	...	2	...	...	...	2	3	...	...	1	2	1	
Purpura . . . . .	9	1	...	...	...	1	4	...	...	1	1	...	...	1	...	...	...	...	...	

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
3	2	...	...	4	...	...	...	...	...	52	35	...	...	6	...	6 cases in S. T. H. in previous years, 4 re-admissions (purpura rheumatica in 1 case). First attack in 35 cases, of these endocarditis in 14 (mitral regurgitation 10, mitral stenosis 1, double mitral 2, aortic 4, aortic and mitral 1), myocarditis 1, andconjunctivitis 1. Second attack in 22 cases, of these endocarditis in 11 (mitral regurgitation 7, mitral stenosis 1, double mitral 3). Pericarditis in 2, pleurisy in 1. Third attack in 7 cases, of these endocarditis in 3 (mitral regurgitation 1, double mitral 1, double aortic 1), pericarditis in 1 case. Remainder multiple attacks, of these endocarditis in 12 (mitral regurgitation 5, mitral stenosis 3, double mitral 1, aortic stenosis 1, double aortic 2). Pericarditis in 2. For 1 fatal case see under Pericarditis.
...	...	...	...	1	...	...	...	1	...	5	1	...	...	All	...	"chronic relapsing rheumatism"; followed on acute rheumatism in 1 case, history of gonorrhoea 1 case. In 1 case having 5 years history and in S. T. H. in previous years; the X rays suggested early bone change. Aortic and mitral disease with pericardial effusion 1 case.
...	...	...	...	1	...	...	...	...	...	3	2	...	...	All	...	poly-articular, 1 followed on an acute attack.
...	...	...	...	...	...	...	...	...	...	1	1	...	...			
2	1	...	...	2	3	...	...	...	...	5	5	...	...	1	...	in S. T. H. on previous occasions, 3 had many previous attacks, albuminuria in 3.
...	...	...	...	...	...	...	...	...	...	2	1	...	...	Scurvy	...	rickets 1.
1	...	1	1	...	1	...	...	...	...	2	1	8	7	1	2	Acidosis in 10 cases. In cases that recovered: peripheral neuritis 2, cataract 1, furunculosis 1. Of fatal cases: pancreatic atrophy in 2 accompanied by phthisis in 1.
...	...	...	...	...	...	...	...	...	...	3	6	...	...	Purpura	...	rheumatica 5, Henoch's purpura 1, toxic purpura 1.

TABLE II—

DISEASE.	Age.	0—						5—						10—						20—						30—					
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.					
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.			
																													M.	F.	M.
I. GENERAL DISEASES—con-																															
tinued.																															
Anæmia . . . . .	29	...	...	...	...	...	...	...	...	...	8	...	...	3	8	1	...	...	...	...	...	...	...	...	...	1					
																•															
Lymphadenoma . . . . .	3	...	...	...	...	1	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...						
Leukæmia . . . . .	3	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	1	...	...	...	...	...	...	...						
General and unclassified tubercle	15	1	...	4	4	...	1	1	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...						
Marasmus and debility . . . . .	23	2	...	4	3	...	...	...	...	3	...	...	3	...	...	2	4	...	...	...	...	...	...	...	...						
Malta fever . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...						
Tetanus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...						
Glandular carcinoma . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...						
Retro-peritoneal neoplasm	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...						
Obesity . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...						





TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
II. DISEASES OF THE SKIN.																					
Eczema . . . . .	1					1															
Erythema multiforme . . . . .	1												1								
Toxic erythema . . . . .	1																				
Dermatitis exfoliativa . . . . .	1																				
Dermatitis herpetiformis . . . . .	1																				
Dermatitis . . . . .	2																				
Linear nœvus . . . . .	1					1															
Erysipelas . . . . .	1					1															
III. DISEASES OF RESPIRATORY SYSTEM.																					
Laryngitis . . . . .	7	1	2	1									1								
Bronchitis . . . . .	20	2	1			1			2				3			3	2	1			

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Chronic otitis media and cholesteatoma. In S. T. H. 1904.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	Pyæmia; no P.M.
...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	Readmission.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
1	...	...	...	...	...	...	...	...	...	1	...	3	2	2	...	1 case readmitted twice, 1 transferred to Surgical side. Of cases discharged: papilloma of larynx 1, tracheotomy performed on 1 case with phthisis, who had improved at one time on anti-syphilitic treatment, other cases simple laryngitis. Of fatal cases: adult, syphilitic (tracheotomy performed). Child was a case of sudden death at the age of 2½ years, the only lesions post-mortem being simple laryngitis, enlarged thymus of normal structure and slight œdema of lungs. Had had two attacks of "choking" previous to the one which terminated fatally.
2	1	...	...	1	...	...	...	1	...	...	...	11	8	1	...	
Of cases discharged: asthma in 3, tonsillitis 1, whooping-cough 1, possibly phthisis 1. Fatal case: cardiac failure with dilated right heart and tricuspid incompetence in a case of chronic bronchitis and emphysema of many years' standing.																



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Disc.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	1	...	1	...	...	...	...	...	...	...	3	6	1	...	
...	...	...	...	...	...	...	...	...	...	29	23	10	8	1	...	

Of cases discharged: readmission 1, in S. T. H. in previous years 1, foreign body 1 (unsuccessful attempt at removal), 3 cases dated their illness from pneumonia, no tubercle bacilli demonstrated in the sputum of any case. Fatal case dated from pleurisy at age of 19 (death at age of 45). P.M.—Symphysis pleuræ on left, also diffuse septic bronchiolectasis, disseminated broncho-pneumonia on right side. No evidence of tuberculosis, either naked-eye or microscopical.

... case of delayed resolution possibly with pneumothorax (X-ray report). 3 cases tuberculosis: 1 discharged, 2 fatal. The remaining 66 cases fall into 4 groups. I. Acute onset, slight rise in temperature (under 101°), duration of fever under 3 days. 3 cases all discharged. II. Acute onset, temperature high and falling by crises: 28 cases, of which 3 died and 25 were discharged. Of the 3 fatal cases 1 was a general infection. Mortality 10·7 per cent. III. Subacute or chronic onset, temperature falling by lysis: 29 cases, of which 10 died and 19 were discharged. Of the cases discharged 1 had rickets, 1 hydrocephalus, 2 whooping-cough, and 1 followed measles. Of the fatal cases 1 followed measles, 1 whooping-cough, 1 a recurrence after an empyema, 1 case had a "honeycomb lung" and 1 a sub-dural hæmorrhage. Mortality 34·5 per cent. IV. Chronic onset, with acute exacerbation, 6 cases, of which 3 died and 3 were discharged; 2 of the latter at parent's request, when moribund. Of the fatal cases one was a general infection, with onset as nephritis, both pneumococci and streptococci were cultivated from pleural exudate. Mortality 50 per cent. (practically 83 per cent.).

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III. DISEASES OF RESPIRATORY SYSTEM— <i>cont.</i>																					
Lobar pneumonia .	114	10	...	1	...	11	12	...	1	26	7	1	...	15	4	4	...	6	2	3	2
Pulmonary tuberculosis	32	...	1	...	...	1	...	...	2	1	...	...	1	4	1	...	5	1	1	...	
Pleurisy . . .	47	...	...	...	...	3	2	...	...	11	2	...	...	7	7	...	...	4	4	...	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
3	1	2	...	...	...	1	...	1	...	1	...	72	26	13	3	
Of cases discharged: right-sided 57; 11 apical and one middle, rest basal. Left-sided 54; 3 apical, rest basal. 1 double, 1 wandering, 1 no definite localising physical signs, but ran the course of a severe pneumonia with crisis on 12th day. In 16 cases the temperature fell by lysis, in the rest by crisis. Albuminuria recorded in 10 cases, acute nephritis in 1 case (cleared up before discharge), phthisis in 1 case, aortic and mitral disease 1, aneurysm 1, whooping cough 1, peritoneal abscess 1 (pneumococci cultivated), thrombosis of femoral vein 1, otitis media 1. Crisis occurred on following days: 2nd day 1, 3rd day 1, 4th day 7, 5th day 18, 6th day 15, 7th day 21, 8th day 7, 9th day 4, 10th day 3, 12th day 1. Of the fatal cases: in 3 only the left lower lobe was affected, in 1 only the right upper, in 1 both lobes of left lung, upper and middle lobes right lung 1, middle and lower lobes right lung 1, all lobes of right lung 5, both lower lobes and right middle 1, whole of right and left lower 1, practically whole of both 1; 1 probably confluent broncho-pneumonia. Pulmonary abscesses occurred in 2 cases, 1 of which was a general infection with onset as acute nephritis, pneumococci cultivated from spleen and peritoneum and kidneys. Acute pericarditis in 1 case, endocarditis in 2, mediastinal cellulitis 1. Death occurred on following days: 3rd day 2, 5th day 5, 6th day 1, 8th day 1, 9th day 3; the case of general infection died on 28th day. The other 3 were admitted moribund, and duration of illness is not recorded. In 2 cases there was gross healed tubercle.																
8	2	...	...	2	1	...	...	1	...	...	...	19	11	2	...	

TABLE II—

DISEASE.	Age.		0—				5—				10—				20—				30—			
	Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
III. DISEASES OF RESPIRATORY SYSTEM— <i>cont.</i>																						
Empyema. . . . .	28	1	2	3	...	5	8	...	...	4	...	1	...	2	4	...	...	1	1	...	...	...



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	1	...	13	10	5	...	Readmissions 2. 1 case tuberculous, the others followed pneumonia or broncho-pneumonia. 4 arose in hospital in cases admitted for pneumonia; all recovered. Of the cases discharged: the following had empyemata on admission. The table shows very little relation between length of history before admission and course of disease after resection. All were probably post-pneumonic, and all had ribs resected.		

No.	Length of history in days.	Duration of fever after operation. Days.	Stay in hospital after operation. Days.	No.	Length of history in days.	Duration of fever after operation. Days.	Stay in hospital after operation. Days.
1	...	8	...	7	...	60	
2	...	12	...	2	...	48	
3	...	15	...	0	...	43	
4	...	17	...	0	...	35	
5	...	21	...	42	...	49	
6	...	21	...	4	...	65	
7	...	28	...	42	...	59	
8	...	28	...	18	...	39	
9	...	28	...	0	...	56	
10	...	28	...	?	...	60	
11	...	28	...	20	...	52	
12	...	35	...	14	...	58	
13	...	42	...	0	...	38	
14	...	42	...	20	...	57	
15	...	45	...	0	...	62	

Readmissions 2. 1 case tuberculous, the others followed pneumonia or broncho-pneumonia. 4 arose in hospital in cases admitted for pneumonia; all recovered. Of the cases discharged: the following had empyemata on admission. The table shows very little relation between length of history before admission and course of disease after resection. All were probably post-pneumonic, and all had ribs resected.

No.	Length of history in days.	Duration of fever after operation. Days.	Stay in hospital after operation. Days.	No.	Length of history in days.	Duration of fever after operation. Days.	Stay in hospital after operation. Days.						
1	...	8	...	7	...	60	9	...	28	...	0	...	56
2	...	12	...	2	...	48	10	...	28	...	?	...	60
3	...	15	...	0	...	43	11	...	28	...	20	...	52
4	...	17	...	0	...	35	12	...	35	...	14	...	58
5	...	21	...	42	...	49	13	...	42	...	0	...	38
6	...	21	...	4	...	65	14	...	42	...	20	...	57
7	...	28	...	42	...	59	15	...	45	...	0	...	62
8	...	28	...	18	...	39							

Case No. 1 had acute transitory nephritis, Case No. 11 tonsillitis.

There were 4 cases which arose in hospital in cases admitted for pneumonia. Case 1.—Æt. 8 years. Broncho-pneumonia. Temperature fell by lysis: normal 11th day; began to rise 13th day. Aspirated 18th day; clear fluid. Aspirated 30th day; purulent. Temperature normal 17 days after operation. In hospital 70 days. Case 2.—Æt. 8 years. Lobar pneumonia. Rib resected 9th day (temperature never normal). Temperature normal 42 days after operation. In hospital 55 days. Case 3.—Æt. 5 years. Broncho-pneumonia. Rib resected 5th day (temperature never normal). Temperature normal 12 days after operation. In hospital 56 days. Case 4.—Æt. 4½ years. Broncho-pneumonia. Rib resected 12th day (temperature never normal). Temperature normal 42nd day. In hospital 75 days. It is noticeable that the cases that arose in hospital had just as long a convalescence as those admitted with purulent collections, some of considerable standing. Of the 5 fatal cases: Case 1.—Æt. 2½ years. History 3 weeks. Death 4 days after operation. Purulent collection separated by dense adhesions into 2 parts, one far back along vertebræ, not evacuated. Empyema R.; disseminated broncho-pneumonia L. Case 2.—Æt. 1½ years. History 18 days. General empyema; death 26 days after operation. Lung pushed forward, collapsed, and adherent to sternum. Case 3.—Æt. 8 months. History 2 days. Death 8 days after operation. Confluent broncho-pneumonia both lungs. Case 4.—Æt. 17 years. Double pneumonia 7 months before admission; left side of chest aspirated 1 month after onset; abscess pointed 3½ months after onset, and was incised; continued to drain until admission, patient keeping on his legs the while. On admission affected side the smaller; rib resected; death 2 days later. P.M.—Generalised left-sided empyema; lung collapsed and bound down; purulent pericarditis and peritonitis. Case 5.—See Special Abstract under heading Lesions in neighbourhood of diaphragm.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
III. DISEASES OF RESPIRATORY SYSTEM— <i>cont.</i>																						
Asthma . . . . .	8	...	...	...	...	...	...	...	1	2	...	...	3	2	...	...	...	...	...	...		
Contracted lung . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		
Coryza . . . . .	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...		
Stenosis of bronchus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...		
Obstruction of bronchus . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Pneumothorax . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...		
Pyo-pneumothorax . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...		

continued.

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	...	...	4	4	...	...	Readmission 2. In S. T. H. in previous years 2.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Chronic plumbism; history of fits; mental condition poor.
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Syphilis at age of 17. Right main bronchus affected. Osteo-periostitis of femur.
...	...	...	...	1	...	1	...	...	...	...	...	1	...	1	...	Same case readmitted and died. See Special Abstract.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Pulmonary tubercle and effusion on affected side. Not purulent. Some improvement.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	Case that recovered. Violent fit of coughing, followed by acute pain and dyspnoea, 7 days before admission. Clear fluid aspirated 14 days after admission; cells mainly finely granular neutrophile. Purulent fluid aspirated a month later; resection of rib and drainage. No tubercle bacilli in sputum on various examinations; only gram positive cocci in pus. Ultimate recovery with collapsed left lower lobe. Fatal case: pneumonia 3 weeks before admission; developed an empyema, which was aspirated. Admitted moribund, with a pyo-pneumothorax and gangrene of chest-wall. P.M.—Lung on affected side solid and airless; obsolete tubercle at apex; no perforation in lung found.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Meta-pneumonic.
1	...	1	...	...	...	1	...	...	...	...	...	2	...	2	2	Of cases discharged: history of syphilis in 1 case, with scars of gummata and pressure on veins of upper extremity. Of fatal cases: in all the mediastinal mass grew along a bronchus, pushing the lung in front of it, and leaving the other lung unaffected. Left main bronchus invaded in 2 cases, right lower in 1, trachea in 1, bronchiectasis in 1, compression of right pulmonary vessels with extensive infarction of right lung 1, invasion of superior vena cava and right auricle 1, all sarcomata.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	See Special Abstract under heading Lesions in neighbourhood of diaphragm.

TABLE II—

DISEASE.	Age.	0—				5—				10—				15—				20—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>IV. DISEASES OF CIRCULATORY SYSTEM.</b>																					
Pericarditis . . .	12	...	...	1	...	1	1	2	1	...	1	2	2	...	...	...	...	...	...	...	...
Mitral regurgitation	12	...	...	...	...	1	...	...	...	1	1	...	...	...	...	...	...	...	...	1	...
Mitral stenosis .	21	...	...	...	...	1	1	...	...	1	...	...	1	...	4	3	...	4	...	1	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	1	...	...	...	...	8	1	4	4	History of rheumatism in 6 cases, repeated attacks of tonsillitis 1 case. Of the cases discharged: 2 had effusions, which were treated by resection of rib and drainage, with good results. Of the fatal cases: endocarditis in 5, fatty degeneration of heart-muscle in 1.		
8	1	...	...	1	1	...	...	2	...	6	5	1	...	4	in S. T. H. in previous years, readmissions 3 (for 1 see Diabetes), history of rheumatism 8. In cases discharged: Acute endocarditis 1, pericarditis 1. Fatal case: history of cardiac symptoms 2 years; chronic sclerosing endocarditis of mitral valve; tricuspid relative incompetence; waterlogging.	
1	...	...	1	...	...	1	...	2	...	7	8	4	2	4	in S. T. H. in previous years, 2 readmissions, rheumatism 11, chorea 4. In cases discharged: pregnancy 1, phthisis 1, arterio-sclerosis 1, relative tricuspid incompetence 3. For 1 other case see Special Abstract. Fatal cases: Case 1. No history of rheumatic infection in any form, only 10 months illness altogether. P.M.—Mitral stenosis, atheroma of pulmonary artery, tricuspid leak and waterlogging. Case 2. Also no history, rheumatism, total duration of symptoms 11 months. P.M.—Mitral stenosis, recent plastic pleurisy and infarcts of kidneys. Case 3. History of rheumatism, 2 years cardiac symptoms. P.M.—Adherent pericardium, mitral stenosis, extensive infarctions (cerebral, pulmonary, splenic and renal). Case 4. No history of rheumatism, duration of symptoms 2 years. P.M.—Mitral stenosis, tricuspid leak, waterlogging. Case 5. No history of rheumatism, total duration of symptoms, 4 years. P.M.—Mitral stenosis, tricuspid leak, waterlogging. Case 6. History, rheumatism, duration of cardiac symptoms 4 years. P.M.—Mitral stenosis and infarction of lungs.	

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
IV. DISEASES OF CIRCULATORY SYSTEM— <i>cont.</i>																						
Double mitral disease	11	...	1	...	...	...	...	...	...	3	...	2	1	...	1	...	...	...	3	...	...	
Aortic disease	20	...	...	...	...	...	...	...	...	2	1	...	...	1	...	...	...	3	...	2	1	

continued.

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	3	5	2	1	2	in S. T. H. in previous years, readmissions 2. History of rheumatism 6. Cases discharged: pericarditis and hemiplegia 1, pneumonia 1. Fatal cases: Case 1. History of rheumatism, cardiac symptoms 13 years; no P.M. Case 2. No history of rheumatism, duration of symptoms 10 months. P.M.—Stenosed and incompetent "button-hole" mitral, tricuspid leak, thrombosis of post-tibial and pulmonary veins, infarction of lungs. Case 3. No history, rheumatism, duration of cardiac symptoms 10 years. P.M.—Stenosed and incompetent mitral valve, tricuspid leak, waterlogging.	
3	1	2	...	3	...	...	...	1	...	...	...	13	2	4	1	Readmissions 2. In S. T. H. in previous years 1. History of rheumatism in 5 cases and of syphilis in 5. Of cases discharged: Regurgitation 3, stenosis 2, rest double. Acute endocarditis 1, hemiplegia 1, and angina 2. Of fatal cases: Case 1. Total duration doubtful. Chronic bronchitis of 20 years' standing; chronic sclerosing endocarditis with destruction and calcification of aortic valves, relative tricuspid incompetence and waterlogging, scars of old infarcts in spleen and right kidney, none recent. Case 2. Long history, total duration doubtful, terminal attack followed "influenza" 3 months before admission. Chronic sclerosing endocarditis of aortic cusps with minute recent vegetations on both aortic and mitral valves. Case 3. Rheumatic fever 20 years before admission, duration of cardiac symptoms doubtful. Sclerosed and adherent aortic
cusps and fatty heart (microscopical report). Case 4. At least 12 years' history. Anginoid attacks. Great destruction of aortic cusps and perihepatitis. Case 5. Acute onset of cardiac symptoms 6 days before admission—death 3 days later. No cardiac symptoms previously. Very large heart, gross old standing destruction of aortic cusps with relative tricuspid and mitral incompetence, waterlogging.																

TABLE II—

DISEASE.	Age.	0—		5—		10—		20—		30—									
		Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.						
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
IV. DISEASES OF CIRCULATORY SYSTEM— <i>cont.</i>																			
Aortic and mitral disease .	20	...	...	...	...	...	...	2	3	2	1	...	2	1	...	2	1	1	1
Unclassified valvular lesions	4	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	1	...



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	1	...	1	...	1	1	...	...	6	6	6	2	Readmissions 2, in S. T. H. in previous years 6. History of rheumatism in 15 and chorea in 1. Of cases discharged; aortic regurgitation and mitral regurgitation 1. Aortic stenosis and mitral regurgitation 2, double aortic and double mitral 1, rest double aortic and mitral regurgitation. Vomiting 1, nodules 1, subacute rheumatism 1. Of fatal cases: Case 1. Duration at least 12 years. Aortic regurgitation and mitral stenosis, relative tricuspid incompetence and waterlogging. Case 2. Duration doubtful, acute cardiac failure, rupture of an aortic cusp and of an aneurysm on a mitral cusp, recent vegetations on both valves. Case 3. Duration of symptoms 4 years, mitral stenosis and aortic incompetence, mixed nephritis. Case 4. Duration doubtful, double aortic and mitral stenosis, pericarditis, and bronchitis. Case 5. Symptoms 2 years. Adherent pericardium, recent vegetations on aortic valves and sclerosis of aortic and mitral valves, relative tricuspid incompetence and waterlogging. Case 6. Duration at least 2 years. Recent and old aortic disease, recent mitral disease, commencing pericarditis. Case 7. Duration of symptoms 4 weeks; no P.M.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	Case 1. Admitted moribund, symptoms 4 weeks. Sclerosis of aortic, mitral and tricuspid valves, waterlogged. Case 2. Symptoms 2 years. Adherent pericardium, "button-hole" mitral and recent vegetations on tricuspid valve. Waterlogging. Case 3. History 12 years. Sclerosis of mitral and tricuspid valves. Case 4. All valves and adherent pericardium; see Special Abstract.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
IV. DISEASES OF CIRCULATORY SYSTEM— <i>cont.</i>																					
Malignant endocarditis	17	...	...	...	...	1	...	...	1	...	1	2	1	3	...	3	...	1	...	1	...
Aneurysm	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...

*continued.*

40—			50—			60 and upwards.			Result.			REMARKS.	
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
M.	F.		M.	F.		M.	F.		M.	F.			M.
.....	1	1	.....	1	.....	.....	.....	.....	5	1	8		3
3	1	.....	3	.....	2	.....	3	.....	10	1	2	.....	Readmissions 1 (died). Of cases discharged: 1 was readmitted and subsequently died, 1 who had repeated emboli and an aneurysm of post-tibial artery died shortly after discharge; of the remaining 4 <i>Staphylococcus albus</i> was obtained in pure culture from the blood of a boy admitted with a sore on his heel who subsequently developed symptoms of valvular disease. Disease apparently arrested on discharge. Streptococci were cultivated from the blood of another who developed hæmaturia while under observation. Of fatal cases: <i>Streptococcus pyogenes albus</i> in pure culture 1, a streptococcus, probably <i>pyogenes albus</i> , 1, <i>S. albus</i> and a diplococcus, ? Fraenkel's pneumococcus 1. Blood culture sterile in 1. Aneurysms of right common iliac 1, of right popliteal 1, and of right internal circumflex 1 (see Special Abstract). Embolism of right middle cerebral and left post-cerebral 1, sub-arachnoid hæmorrhage 1. 2 cases followed on acute illnesses diagnosed as rheumatic fever 6 weeks and 5 months before admission respectively (from the blood of the latter the diplococcus mentioned above was cultivated). 1 case followed on an attack of chorea, and in 1 case, where pus was found in the right sterno-clavicular articulation, there was acute onset with joint pains and jaundice.
													History of syphilis 7, and probably in 2 others. Of cases discharged: gall-stones in 1, dysphagia 1. Of fatal cases: Case 1. Aneurysm of ascending arch had ruptured into right bronchus, the right lung was fibrotic, and there had been much pressure on right bronchus; there was also sclerosis of aortic valves and chronic interstitial nephritis. Case 2. Saccular aneurysm of ascending arch, no valvular lesion. Possibly an aneurysm of popliteal had been treated surgically many years before admission.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.
IV. DISEASES OF CIRCULATORY SYSTEM— <i>cont.</i>																					
Arterio-sclerosis . . . . .	25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tachycardia . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Congenital heart disease . . . . .	7	...	...	1	...	...	1	...	1	4	...	...	...	...	...	...	...	...	...	...	
Raynaud's disease . . . . .	3	...	...	...	...	...	...	...	1	...	...	1	1	...	...	...	...	...	...	...	
Cardiac hypertrophy . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cardiac dilatation . . . . .	3	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	
Fatty heart . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Myocarditis . . . . .	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	...	
Cardiac failure . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Morbus cordis . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	
Epistaxis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hæmophilia . . . . .	2	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Polycythæmia . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
2	1	2	...	2	2	3	...	9	1	3	...	13	4	8	...	History of syphilis in 1. Of cases discharged: nephritis in 3, bronchitis 2, diarrhoea and vomiting 1, "fits" 2. Of fatal cases: acute exacerbation of old standing renal disease 1, chronic nephritis 2, "arterio-sclerotic kidney" 1, recent endocarditis 1, fibrosis of heart muscle 2, obsolete phthisis 2, possibly an obsolete hydatid between the upper pole of left kidney and liver 1, symphysis pleura 1.
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	15 years' history: subject to these attacks seizure and recovery without apparent reason. Pulse-rate normal on discharge.
...	...	...	...	...	...	...	...	...	...	...	...	4	1	1	...	Readmissions 3. Fatal cases: Case 1. Death due to acute enteritis. Incomplete inter-ventricular septum, aorta arose from right ventricle, and pulmonary artery from aorta. Patent ductus arteriosus. Case 2. Aortic valves composed of only 2 cusps.
...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	1	...	...	...	1	...	...	...	2	1	...	...	
...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	1	...	...	1	...	...	...	3	...	2	...	Tachycardia 1, gout 1. Fatal cases: Case 1. Anginoid attacks, slight atheroma of aorta and dilatation of arch. Case 2. Myocarditis and dilatations of auriculo-ventricular apertures.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	No P.M.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	In S. T. H. in 1904. Very little distress.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	No albuminuria.
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	Same case readmitted. Repeatedly in S. T. H.
...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	See report by Dr. Acland.

TABLE II—

DISEASE.	Age.	0—		5—		10—		20—		30—				
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.		
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
V. DISEASES OF DUCTLESS GLANDS.														
Exophthalmic goitre	24	...	...	...	...	...	1	3	...	8	2	2	7	...
Myxœdema	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Addison's disease	1	...	...	...	...	...	...	...	...	...	...	1	...	...
VI. DISEASES OF DIGESTIVE SYSTEM.														
Foreign body in pharynx	1	...	...	1	...	...	...	...	...	...	...	...	...	...
Mouth and fauces	13	...	3	...	2	...	1	...	6	...	1	...	...	...

continued.

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	1	...	...	...	...	...	...	...	...	3	19	...	2	Of cases discharged: 1 in S. T. H. previous years; acute onset in 5, following parturition in 2, and "fright" in 2, other cases insidious onset; acidosis 1, aceto neuria 1, glycosuria 2 (in addition to 2 preceding), albuminuria 6, gastric crises in 3, 1 of them being the case of acidosis whose urine was quite normal on discharge; in the other 2 the urine was normal. Tænia were present in 1 case, conjunctivitis 1. In the majority of cases there was gain in weight and loss of subjective symptoms, but no marked alteration in pulse-rate or size of tumour. Fatal cases: Case 1. Cachectic type; insidious onset; 4 years' history; at first improved, but subsequently went downhill rapidly, following an acute faucial attack; rapid wasting of thyroid before death. At P.M. miliary tubercle of bronchial glands; no cardiac lesion, but cardiac organs. Case 2. Death followed shortly after operation for removal with symptoms of thyroidism. Glycosuria and autoneuria during life. P.M.—Thyroid and thymus both hypertrophied. Duration 2½ years.		
...	...	...	...	1	...	...	...	...	...	1	...	...	...	Great improvement. Albuminuria on admission; subsequently disappeared.		
...	...	...	...	...	...	...	...	...	...	...	...	1	...	Pigmentation observed about 12 months, other symptoms 6 weeks; death sudden. P.M.—Right suprarenal caseous, left atrophied. Obsolete phthisis at both apices.		
...	...	...	...	...	...	...	...	...	...	...	...	...	1	Retro-pharyngeal suppuration, commencing purulent pericarditis, double purulent pleurisy, and pulmonary collapse.		
...	...	...	...	...	...	...	...	...	...	2	11	...	...	Stomatitis 1, teething 1, carious teeth and dysapepsia 1, rest tonsillitis. Spirillum of Vincent present in 1 case.		

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
Neoplasm of œsophagus	10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Obstruction of œsophagus	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Dyspepsia	12	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	1	1	...	...	...
Gastric ulcer	55	...	...	...	...	...	...	...	...	5	...	...	2	12	...	2	2	13	1	...	...



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.		
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.				
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
1	1	1	...	5	...	2	...	...	...	6	1	3	...	<p>Of cases discharged: readmission 1, obstruction at following distances from central incisor teeth, 11, 11½, 14, 15½, and 17½ inches. One case died after transfer to Surgical side; gastrostomy performed. P.M.—Growth at level of bifurcation trachea; perforation of left bronchus and gangrenous broncho-pneumonia: invasion of wall of aorta. Microscopically squamous-celled carcinoma. Duration of symptoms 2½ months. Gastrostomy performed in 2 other cases. Of fatal cases: Case 1. Growth at level of bifurcation of trachea; perforation</p>				
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...	<p>into large abscess in post-mediastinum; circumscribed gangrene base of right lung; duration of symptoms 4½ months. Case 2. Gastrostomy performed; growth at level of bifurcation of trachea; duration of symptoms 8 months. Case 3. Growth at level of bifurcation of trachea; mixed tuberculous and septic broncho-pneumonia; gangrene of lungs; duration of symptoms 10 months.</p>				
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...	<p>Presumably congenital; dilatation pouch above stricture. Free hydrochloric acid found in all cases where examination was made. Goitre 1, slight gastroptosis 1, foul condition of mouth 2, pregnancy and "acid dyspepsia" 1.</p>				
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
2	5	1	2	4	1	...	1	...	1	...	12	36	3	4	...	<p>Of cases discharged: hæmatemesis and melæna observed in 5, melæna in 1, history given in most cases. Parotitis in 5 (double in 1), accompanied by facial paralysis in 2. Pyloric obstruction and dilatation of stomach in 3; gastro-jejunoscopy performed in 5 cases, accompanied by gastrolisis in 1; perforation in 6—all chronic ulcers; duration from onset to operation 3 hours 1, 5 hours 2, 10 hours 1, 20 hours 1, and 24 hours 1. Two other cases died after transfer to Surgical side, each with 20 hours' history between onset and operation. In 1 case of chronic perforation with about 2 weeks' history there were perigastric, subdiaphragmatic, and intra-peritoneal abscesses; recovery. Of fatal cases: perforation in 5 (1 brought in dead). 3 others admitted moribund, and no operation attempted; death within 9, 14, and 19 hours from onset respectively. The 14-hour case was an acute necrosis; the other case of perforation was also an acute necrosis; death occurred 3 hours after operation and 14 hours from onset (only 5 other cases of acute necrotic perforation traced in hospital records). Of the other 2 cases 1 had a subdiaphragmatic abscess and purulent pericarditis, presumably related to a non-perforated chronic ulcer, the other died after operation for anastomosis in a case of hour-glass stomach.</p>		
...	...	...	...	...	...	...	...	...	...	...	...	...	...					
...	...	...	...	...	...	...	...	...	...	...	...	...	...					

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
Duodenal ulcer . . . . .	11	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	...	...
Vomiting . . . . .	16	2	1	...	...	...	...	...	...	1	4	...	...	4	...	...	...	3	...	...	...
Malignant disease of stomach	32	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	1	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
3				3				1				11				2 transferred to Surgical side, both subsequently died. Perforation in both cases, in each case first digestive symptoms ever experienced 7 days and 4 days before admission respectively, accompanied by vomiting and tarry stools in the former. Length of history of perforation doubtful. Symmetrical duodenal ulcers in each case accompanied in 1 by a large chronic gastric ulcer. Of the other cases: melæna observed in 4, hæmatemesis 1, "coffee-ground vomit" 1. History of melæna in all. Very marked anæmia 1. Adhesions and relief following gastro-jejunostomy 1.
										1		3	13			1 case of cyclical vomiting readmitted thrice. Another case readmitted and died. See under Cholelithiasis.
2	2	1		6	3	1	1	7		3	2	18	5	6	3	Readmissions 1. 8 cases transferred to Surgical side, 5 of whom subsequently died. For 1 other case see Intestinal obstruction. Of cases discharged: gastro-jejunostomy in 3, growth on lesser curvature in 2, at pylorus in 1, exploratory cœliotomy 1, secondary deposits on liver and omentum; in 1 of the above cases a trace of free hydrochloric acid

was present, none was found in any other case where a definite diagnosis was made. Of the cases discharged: without operation there were palpable masses in the abdomen of 12, accompanied by dilatation of stomach in 2, and visible peristalsis in 2. Of the fatal cases whether transferred or not: growth at pylorus in 7, carcinoma in 6 of these with duration of symptoms varying from 5 months to 2 years. Pneumonia and empyema in 1—pneumococci cultivated from pus. No P.M. Metastases in 2, gastro-jejunostomy performed in 3, spheroidal-celled growth and mucoid degeneration 1, others examined columnar-celled. For 1 case of recurrence in pylorus after removal of breast, see Special Abstract. 1 case sarcoma of pylorus, gastro-jejunostomy performed, no metastases, duration of symptoms 5 months. Growth on lesser curvature in 2 cases with metastases in both, spheroidal-celled growth in 1 and columnar-celled in the other. Duration of symptoms 2½ months and 6 months. Both curvatures 1, gastro-jejunostomy performed, duration of symptoms 5 months. No P.M. Perforated malignant ulcers of anterior wall with peritonitis 2, duration of symptoms 4 months and 9 weeks. Diffuse carcinoma of stomach with lymphatic dissemination 1, duration 12 months. For a case of generalised carcinomatosis see Special Abstract.

TABLE II—

DISEASE	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
Gastro-intestinal . . . . .	64	16	10	8	5	1	3	...	...	4	3	...	...	6	3	...	...	1	2	...	...
Diarrhoea . . . . .	4	...	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...	...
Dysentery . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
Colon neuroses . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulcerative colitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...
Constipation . . . . .	20	4	1	...	...	1	...	...	...	1	3	...	...	2	2	...	...	2	...	...	...
Intestinal obstruction . . . . .	20	...	...	...	...	...	...	...	...	1	1	1	...	2	...	...	...	3	1	...	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1	...	...	...	...	...	1	...	...	30	21	8	5	50 of these cases including all fatals acute gastro-enteritis. In 1 fatal case hæmorrhage into suprarenals and into an enlarged thymus. Nothing of note in other post-mortems. Fish poisoning probably in 2 adults, pregnancy in 1. Readmission 1, discharged a month previously after mild attack of enteric fever.			
...	...	...	...	...	...	...	...	...	3	1	...	...	...			
...	...	...	...	...	...	...	...	...	2	...	...	...	...			
2	...	...	...	...	...	...	...	...	2	...	...	...	...			
...	...	...	...	...	...	...	...	...	1	...	...	1	1 Appendicostomy and lavage without relief in 1. Fatal case: duration of symptoms 12 months. Ulceration from last 12 inches of ileum to upper part of rectum.			
2	...	...	...	...	...	1	1	...	11	9	...	...	...			
3	2	...	...	1	...	...	4	1	7	11	2	...	16 transferred to Surgical side, 12 of whom subsequently died. Of cases discharged: mass in mesentery probably arising from vertebral growth, gastro-jejunostomy and relief 1, strangulation by adherent Meckel's diverticulum 1, cœliotomy and amputation of diverticulum, band obstruction after hysterectomy 1, ? cause 2, cœliotomy and enterolysis in each case, ileum adherent to tuberculous mesenteric gland 1, cœliotomy and enterolysis. Of fatal cases, whether transferred or not: volvulus 2, of cæcum 1, of sigmoid 1. Adherent Meckel's diverticulum 3, bowel resected in 2, no operation in 1 (admitted moribund), by adhesions to tuberculous gland 1, acute dilatation of stomach after operation. Ruptured strangulated umbilical hernia 1, in 1 case where obstruction was relieved by colotomy the case was subsequently readmitted and died;			
at the P.M. diffuse carcinoma of stomach, omentum, etc. 1 case ruptured stercoral ulcer of cæcum, probably carcinoma of splenic flexure. No P.M. Other cases due to bands, 3 probably old cases of appendicitis, that organ being the centre of adhesions in each case. Abscess of abdominal wall in 1, in 1 the right Fallopian tube contained pus; there was much matting of pelvic viscera and perilienic, and pulmonary abscesses.																

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				50—			
		Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
VI. DISEASES OF DIGESTIVE SYSTEM—continued.																					
Intussusception . . .	19	7	2	1	6	...	1	...	...	...	...	...	...	1	...	...	...	...	...		
Malignant disease of intestine	16	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	1	1	1		

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.	
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
								1				7	4	1	7		Of cases discharged: enteric—ileo-colic 1, enteric—ileo-cæcal 1, ileo-cæcal 4, ileo-colic-colic 3, colic-colic 1, cœliotomy and reduction in all; greatest interval between onset and operation 28 hours; operation refused in 1 case, and patient removed. Of fatal cases: enteric—ileo-colic 1, ileo-cæcal 1, ileo-colic 1, ileo-colic-colic 1, cæcal ileo-colic 1. Cœliotomy and reduction in 5, enterectomy 1. 2 cases admitted moribund, ileo-colic-colic 1, the other a woman of 55 with a 3 months' history; the whole length of large bowel and 3 in. of ileum had invaginated into the rectum, become adherent, sloughed, and perforated; general peritonitis.
3	2			1	1			1	1	1		7	5	3	1	12	cases transferred to Surgical side, 4 of whom subsequently died. Of cases discharged: obstruction in 1, partial obstruction in 3, growth at or just below splenic flexure of colon in 3, in one of which growth was irremovable; in the others transverse colostomy was performed, and subsequently resection of growth with lateral implantation in 1, and axial anastomosis in the other. Carcinoma of cæcum in 2, ileo-colostomy in each case, growth irremovable. Carcinoma of pelvic colon 1, left iliac colostomy; carcinoma of rectum 2, left iliac colostomy in each. Of fatal cases whether transferred or not: obstruction in 4, growth of pelvic colon in 4, rupture of stercoral ulcer of cæcum in 3 of these, all columnar-celled carcinoma; metastasis in 1, colotomy in 2, no operation in 2. Growth of rectum 2, both columnar-celled carcinoma; operation in neither; metastasis in 1, recurrence after Kraske's operation 4 years before in the other. Carcinoma of hepatic flexure 1. For case of duodeno-colic fistula see Special Abstract.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
Appendicitis .	178	.....	.....	.....	14	3	1	...	36	17	5	1	37	15	1	...	16	8	1	...	



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
8	2	1	...	4	3	...	...	4	...	...	1	119	48	9	2	Readmission 1, 91 cases transferred to Surgical side, 12 of whom subsequently died. No attempt at classification by

Readmission 1, 91 cases transferred to Surgical side, 12 of whom subsequently died. No attempt at classification by attacks is made in that the appearance

of the organ at operation or post-mortem appears frequently to bear so little relation to the history. 45 cases were treated without operation with 3 deaths; of the latter 2 were admitted moribund with general peritonitis, and 1 with gross bronchitis and portal pyæmia. Among the cases that recovered in this group there was bronchitis in 1, pulmonary tubercle in 1, jaundice in 1, polyencephalitis 1, and in 1 an abscess discharged per rectum. The 138 cases subjected to operation may be classified as follows:

	No.	Discharged.	Died.	Mortality per cent.
Simple appendicitis:				
a. Acute stage . . . . .	7	7	0	0
β. Interval . . . . .	31	31	0	0
Appendicitis and spreading peritonitis . . . . .	19	11	8	42 %
Appendicitis and general peritonitis . . . . .	28	12	16	57 %
Appendix abscess:				
a. Incision and drainage . . . . .	27	22	5	18·5 %
β. Appendicectomy and drainage . . . . .	18	15	3	16·6 %
γ. Incision and subsequent appendicectomy . . . . .	3	3	0	0

In all fatal cases in which a post-mortem was performed general peritonitis obtained. Of the 24 fatal cases with non-localised peritonitis at operation 12 were treated by lavage and 12 by dry swabbing. Of the 23 cases of this type that recovered 8 were treated by lavage and 20 by dry swabbing.

Complications in cases mentioned in above table:

Group 1 (b).—Bronchitis and pleural effusion in 1.

Group 2.—In the 8 fatal cases 1 had hæmoptysis and septic infarction of right lung, and empyema with pulmonary abscess on left side, pneumonia 1, broncho-pneumonia 1. 2 other cases were probably diffusion of abscess.

Group 3.—Of the cases that recovered: 1 suggested diffusion of abscess, and in 1 celiotomy was subsequently performed for relief of band obstruction. Of the fatal cases: active pulmonary tubercle 1, perilienic abscess 1, hydronephrosis 2, in 1 of these affecting the right half of a horse-shoe kidney, and intra-peritoneal abscess 1.

Group 4 (a).—In 1 fatal case death in association with a residual abscess, for which patient was readmitted.

Group 4 (β).—In 1 case that recovered German measles, and in 1 empyema and parotid bubo, and in 1 fatal case pyo-salpinx.

Duration of stay in hospital for cases discharged works out as follows:—Cases not operated upon 20 days, simple appendicitis, acute stage, 20 days, simple appendicitis, interval operation, 41 days, appendicitis and spreading peritonitis 33—35 days, appendicitis and general peritonitis 41 days, incision and drainage of abscess 41 days, incision of abscess and appendicectomy 44 days.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
VI. DISEASES OF DIGESTIVE SYSTEM—continued.																					
Gastro-enteroptosis . . . . .	13	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	...	...	...
Pancreatic disease . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Pyloric stenosis . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tænia . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Hiccough . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Proctitis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Peri-gastric adhesions . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Tuberculous peritonitis . . . . .	17	3	2	...	...	1	...	...	...	2	4	1	1	...	2	...	...	1	...	...	...
Peritonitis . . . . .	6	...	...	1	...	...	...	...	1	...	...	...	...	...	1	1	...	...	...	...	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	3	...	...	2	...	...	...	2	...	...	...	13	...	...	...	Gastro-jejunostomy performed in 1 case. Cammidge's tests negative in 2, positive in 1. Diagnosis confirmed in latter by exploratory operation; small calculi in gall-bladder.
1	...	...	...	1	1	...	...	...	...	...	...	2	1	...	...	
1	...	1	1	...	...	...	...	...	...	...	...	1	...	1	1	Case discharged due to hydrochloric acid poisoning; see Special Abstract. Of fatal cases: 1 also due to hydrochloric acid poisoning, for which see Abstract, 1 due to chronic inflammatory thickening. Gastro-enterostomy in all 3, peritonitis in both fatals.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	6	9	1	1	Anterior gastro-jejunostomy performed 1903; gastrolisis; relief.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	2	...	...	...	...	...	...	...	2	1	2	13	Of cases discharged: cœliotomy performed in 2, both did well; ascites in 4, salpingitis 1, pleurisy 1. 1 case suggested early Graves' disease. Fatal cases: 1 admitted moribund with intestinal obstruction, said to have had no symptoms whatever till nipping of small bowel under adhesion two days before admission. At P.M. disease very advanced. Other case acute onset; duration only 6 months. At P.M. caseous tubercle of left ovary and terminal miliary tubercle of lungs and pleura. For 2 other fatals see Cirrhosis of liver.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	transferred to Surgical side, 2 of whom subsequently died. Case discharged: chronic peritonitis, symptoms dating from parturition 9 months before admission, cœliotomy, and enterolysis. For 4 cases of fatal peritonitis without perforation of hollow viscera see Special Abstract. Other case a perforated stercoral ulcer; infected peritoneum in a case of chronic peritonitis. No evidence of tubercle at autopsy, and no tubercle bacilli present in films made from organised exudate.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—<i>continued.</i></b>																					
Cirrhosis of liver . . .	34	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	2	1	2
Jaundice . . . . .	6	...	...	...	...	1	1	...	...	1	...	...	...	1	1	...	...	...	...	...	...
Cholelithiasis . . .	33	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	6	...	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
8	3	...	...	4	3	1	...	...	1	2	1	18	9	4	3	Readmissions 3, 1 died. 2 transferred to Surgical side. Of cases discharged: ascites 10, pleural effusion 2, tuberculous peritonitis 1, hæmatemesis 2, melæna 3, jaundice 4, thrombosis of axillary vein 1, history of malaria 3, Morrison's operation performed twice, once with good result, once without benefit. This last case also had tuberculous peritonitis. Of fatal cases: jaundice in 5, ascites in 5, terminal tubercle in 3, portal thrombosis 1, nodule of growth, microscopically carcinoma, probably primary of liver 1, ruptured œsophageal vein 1, chronic peritonitis 2, interstitial nephritis 2, pyæmia and acute caseous phthisis 1. Death followed Morrison's operation in 1 case by syncope. Recent mitral endocarditis at P.M.
1	...	...	...	...	...	...	...	...	...	...	...	3	3	...	...	1 possibly gall-stones, rest catarrhal.
4	5	...	...	1	3	...	1	3	7	...	...	9	23	...	1	11 transferred to Surgical side, 2 subsequently died. One other case readmitted on Surgical side and died. Of cases discharged: jaundice observed in 17, cholecystitis 1, empyema of gall-bladder 1, carcinoma of gall-bladder 1, cholecystostomy performed in 10 accompanied by communo-choledochotomy in 2, and cystocholedochotomy in 1, cholecystectomy in 3. Camidge's tests negative in 2 cases. Of fatal cases: Case 1. Gangrenous cholecystitis; cholecystostomy performed; at autopsy general peritonitis and pylephlebitis. Case 2. Cholecystitis and cholangitis, cholecystostomy. At autopsy suppurative phlebitis of inferior vena cava, superior mesenteric, and iliac veins. Case 3. No P.M.; probably general peritonitis.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
<b>Malignant disease of liver</b>	10	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	...	1	...	...	...
<b>Liver abscess</b>	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
<b>Hydatid disease of liver</b>	4	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...

continued.

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1	...	...	...	3	2	...	1	...	...	...	...	6	2	1	1	Readmission 1. Of cases discharged: jaundice 2, ascites 1, exploratory celiotomy 1; diffuse growth of liver; free hydrochloric acid present in test meal. In 1 case with a palpable nodular liver a sarcoma had been removed from the orbit 10 years before. Of fatal cases: in 1 spheroidal-celled carcinoma of liver, metastases, lungs, ribs, portal glands, and mesentery. The other case was probably primary carcinoma of liver; the brother died at the same age in 1898 of primary carcinoma of liver in this Hospital. Report by Drs. Acland and Dudgeon in 'Path. Trans.' In this case islets of spheroidal-celled carcinoma in lungs, pleuræ, and cerebellum. Will be reported by Dr. Acland.
2	...	...	...	1	...	...	...	...	...	...	...	4	...	...	...	Readmission 1. 1 case in S. T. H. in 1904, when a liver abscess was incised and drained; recurrence in a different situation. Incised and drained. In the second case abscess communicated with lung, and bile-stained pus was expectorated. The third case of multiple liver abscesses left hospital moribund.
...	1	...	...	...	...	...	...	...	...	...	...	1	3	...	1	1 case transferred to Surgical side; subsequently died. 1 case transferred to St. Thomas's Home, where a unilocular cyst was found at operation. 1 case had been in S. T. H. in previous years, and was admitted for exploration of sinus. No recurrence 11 months later. •In the third case a unilocular cyst was found and removed. The fatal case was in S. T. H. in 1904 for Raynaud's disease and morbus cordis. Exploratory celiotomy performed and abscess drained. P.M.—Old calcified hydatid in right lobe of liver, abscess around gall-bladder, duodenal ulcer, mitral stenosis, interstitial nephritis, and atheroma of aorta.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		Total.																			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VI. DISEASES OF DIGESTIVE SYSTEM—continued.</b>																					
Malignant disease of gall-bladder	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Gumma of liver	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Intra-hepatic suppuration	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Enlarged spleen	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Malignant disease of pancreas	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Abdominal tumour of doubtful nature	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Abdominal pain of obscure causation	25	...	...	...	...	3	...	...	...	4	3	...	...	1	8	...	...	1	3	...	...
Sub-diaphragmatic abscess	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...

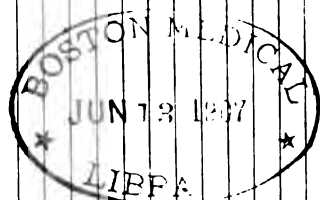


*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
		1					2						1	2		For 1 other case see Cholelithiasis. Case 1. Duration 4 months, jaundice 3 months. Cholecystostomy performed. P.M.—Symmetrical chronic ulcers of pylorus and obstruction due to scar tissue; a nodule in gall-bladder was microscopically columnar-celled carcinoma. The other two cases both moribund; both carcinoma; in the one case metastases in liver, pancreas, and portal glands; in the other in liver and peritoneum.
													1			
		1												1		See Special Abstract.
																In 1 case in S. T. H. in 1904 a wandering enlarged spleen was found at an exploratory cœliotomy and fixed. Admitted for debility. The other case possibly polycythæmia.
1						1		1	1			2	1	2		Of cases discharged: jaundice in all, duodeno-choledochotomy in 1. Of fatal cases: jaundice 1. Exploratory cœliotomy. Growth microscopically columnar-celled carcinoma. The other case was not jaundiced, but developed ascites and hydrothorax. P.M.—Metastases in liver, omentum, and diaphragm. Microscopically columnar-celled carcinoma.
1				2	1											2 in S. T. H. in previous years.
	2											9	16			
2																2 transferred to Surgical side; both subsequently discharged. All incised and drained. Empyema in 1.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>VII. DISEASES OF URINARY SYSTEM.</b>																					
Acute nephritis . . .	22	2	2	...	...	3	2	1	1	3	2	...	...	1	...	...	...	1	...	...	1
Chronic nephritis . . .	54	...	...	...	...	...	...	1	...	...	2	1	2	1	3	2	1	1	6	1	3



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1	1	.....	.....	1	.....	.....	.....	11	7	2	2	Of cases discharged: 2 followed fairly closely after scarlet fever and 2 measles. In the other cases no predisposing cause was made out, 3 of them were undoubtedly exacerbations of old-standing lesions. In 5 cases the urine had cleared up completely on discharge, and in 5 there was only a trace of albumen, 2 still had hæmaturia. Retinitis observed in 1 case. Of the fatal cases: No. 1. Was possibly post-scarlatinal, there was a terminal infection and sero-fibrinous peritonitis, pleurisy, and a purulent pericarditis found P.M. No. 2. There had been a recent abortion, and there was a mild degree of peritonitis, the right kidney was functionless and the site of obsolete tubercle which had invaded ureter, the left was hypertrophied and in acute inflammation. No. 3. No predisposing cause made out, sero-fibrinous effusion on right side of chest; lung not pneumonic. No. 4. Typhoid state on admission, much bleeding from gums, Widal's reaction negative, and blood not suggestive. At the P.M. there were subdural hæmorrhages as well as the kidney lesion.				
5	2	2	.....	7	4	1	3	3	1	1	.....	26	12	10	6	Readmissions 2, 1 case transferred to Surgical side. Of cases discharged: dropsy in 1, œdema conspicuous in 3 others, bronchitis 3, asthma 1, mitral disease 2, cardiac failure, 1 uræmia 2, glycosuria 1, colon-bacilluria 1, constipation and retinitis observed in 2. There was a history of scarlet fever in 3, in none of the others was there either a history of an acute attack or any other predisposing cause. Of fatal cases: exposure to lead in 2 cases (both interstitial). History of scarlet fever 2 (both interstitial), measles 1 (large white), retinitis observed in 5, uræmia in 5, cerebral hæmorrhage 3 (for 1 see Special Abstract), pericarditis 3, mitral endocarditis 1, perihepatitis 1. 7 cases were water-logged at death, 5 were simple cardiac failures, in 1 there was fatty change in heart muscle, and 1 was a large white kidney. With regard to the kidneys: 8 were contracting red, 5 contracting white, 1 mixed, and 2 large white.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
VII. DISEASES OF URINARY SYSTEM—continued.																					
Renal colic . . . . .	14	...	...	...	...	...	...	...	1	...	...	...	3	1	...	...	5	1	...	...	
Hæmaturia . . . . .	3	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Albuminuria . . . . .	4	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	
Pyuria . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	
Nephralgia . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
Suppression of urine . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	
Incontinence of urine . . . . .	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Nephroptosis . . . . .	6	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	4	...	...	...	
Hydronephrosis . . . . .	6	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	1	...	...	...	
Pyonephrosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	
Congenital cystic disease of kidneys . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tuberculous disease of kidneys . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Neoplasm of kidney . . . . .	2	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Cystitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
Bilharziosis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	
Colen bacilluria . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	
VIII. DISEASES OF NERVOUS SYSTEM.																					
Meningitis . . . . .	19	2	1	7	2	1	2	...	1	...	...	...	1	...	...	...	1	...	1	...	

continued.

40—			50—			60 and upwards.			Result.			REMARKS.
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
M.	F.		M.	F.		M.	F.		M.	F.		
1			1	1					11	3		4 cases transferred to Surgical side. Nephrolithotomy performed on 5. Right-sided 6, left sided 3, others not recorded. Hydronephrosis in 1 case. 1 case was pregnant, and in 1 case there was pericarditis.
1			1						3			1 case readmitted in 1906 turned out to be a case of tubercle of kidney.
1									2	2		
									2			
									1			
									1			See Special Abstract.
1									6			Nephropexy performed on 3.
			2						6			1 case transferred to Surgical side for right lumbar nephrectomy.
									1			
			1									1 Liver and right ovary also affected. Tuberculosis of mediastinum, pericardium, and right pleura.
3									3			Readmission 1, tubercle bacilli in urine. Tuberculous epididymitis other case.
								1	1		1	Fatal case admitted for pneumonia, carcinoma of left kidney found at P.M.
												Fatal case: surgical kidneys.
									1			Report by Dr. Dudgeon and Mr. Sargent. See
									4	3	8	4 Of cases that recovered: 2 syphilitic and 2 probably "meningitis serosa"; transitory optic neuritis in 1 of the latter. Of fatal cases: 3 appeared to be secondary to otitis media suppurativa, in 2 others this condition developed after the meningitis, in 1 case in which cancrum oris also occurred it followed directly on measles, in 1 it was due to an abscess in connection with a punctured wound of skull, in 3 there was acute onset with headache, vomiting, and diarrhoea accompanied in 2 by a purpuric eruption. Other complications: internal hydrocephalus 1, broncho-pneumonia 1, and congenital heart disease 1. The following organisms were cultivated from pus or cerebro-spinal fluid: pneumococcus and <i>S. pyogenes albus</i> from case of measles, meningococcus of post-basis meningitis from the acute onset case without purpura, gram-positive cocci and gram-negative diplococci from 1 of the cases of acute onset with purpura, and gram-negative cocci and diplococci from 1 other case.

TABLE II—

DISEASE.	Age.	0—		5—		10—		20—		30—	
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.
			M.	F.		M.	F.		M.	F.	
VIII. DISEASES OF NERVOUS SYSTEM— <i>continued.</i>											
Tuberculous meningitis . . . . .	10	1	...	4	2	...	1	1	...	1	...
Hemiplegia . . . . .	13	1	...	...	...	...	...	2	...	3	...
Intra-cranial hæmorrhage . . . . .	5	...	...	1	...	...	...	...	...	...	1
Cerebral tumour . . . . .	15	...	1	...	...	...	3	1	1	...	1
Headache . . . . .	2	...	...	...	1	...	...	1	...	...	...
Injury to head . . . . .	1	...	...	...	...	...	...	...	...	...	...
Concussion . . . . .	1	...	...	...	...	...	...	...	...	1	...
Paralysis agitans . . . . .	1	...	...	...	...	...	...	...	...	...	...
Athetosis . . . . .	1	...	...	...	...	...	...	...	...	...	...
Migraine . . . . .	1	...	...	...	...	...	1	...	...	...	...
Menière's disease . . . . .	1	...	...	...	...	...	...	...	...	...	...
Aphasia . . . . .	1	...	...	...	...	...	...	...	...	1	...
Cerebral spastic diplegia . . . . .	2	...	1	...	...	...	...	1	...	...	...
Hydrocephalus . . . . .	2	...	1	1	...	...	...	...	...	...	...

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.		
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.				
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
														1	6	3		Cases discharged removed moribund. Fatal cases: caseous mediastinal glands 3, both mediastinal and mesenteric glands caseous 1, no P.M. in 2, and head only examined in 1, ulceration of jejunum the only other focus, apart from meninges 1. Of the above 1 case was admitted for pleural effusion, and 1 for tuberculous iritis. For a case of tuberculous meningitis in an adult simulating typhoid fever see Special Abstract.
3				2				1	1			12	1					Right-sided 7, left-sided 5. 2nd attack 2, 3rd attack 1, rest 1st. Trauma 1, no albuminuria in 5, thrombosis in 3, history of syphilis 1. Readmission 1.
	2					1							4	1				Advanced arterial disease 3, diffuse sub-arachnoid hæmorrhage, fatty heart, and myocarditis 1. For case in child of 3 years see Special Abstract. Advanced pulmonary tuberculosis 1, caseous bronchial glands 1.
1	1			1	1					1		7	4	4				Of cases discharged: optic neuritis observed in 9, general symptoms only in 7, 1 case transferred to Surgical side for trephining. Of fatal cases: Case 1. Tumour of corpus callosum trephined before admission, hæmorrhage from hernia cerebri. Case 2. No P.M. For tumour of sella turcica, and tumour simulating cerebral hæmorrhage and microscopically of chorion epithelioma type in a man, see Special Abstract.
												2						History of trauma 1.
				1								1						
				1								1						
								1				1						
								1				1						
								1				1						
												2						
														1	1			Recovery.
																		Trauma 1, evidence lues 1.
																		Sequel of post-basic meningitis 1, congenital 1, with imperforate iter a tertio ad quantum ventriculorum.

TABLE II—

DISEASE.	Age.		0—				5—				10—				20—				30—			
	Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
VIII. DISEASES OF NERVOUS SYSTEM— <i>continued.</i>																						
Pyocephalus . . . . .	1														1							
Convulsions and fits of doubtful causation	6	2			1						1										1	
General paralysis of the insane	2																		1			
Intra-cranial syphilis . . . . .	6																		4			
Chorea . . . . .	18					1	2				3	10			2							
Neurasthenia . . . . .	40										1	4			5	14			7	5		
Epilepsy . . . . .	12					2					1	4							2			
Myelitis . . . . .	8				1										1				1			
Paraplegia . . . . .	3																					
Fractured spine . . . . .	1														1							
Spinal caries . . . . .	4					1	1				1				1							
Infantile paralysis . . . . .	3		2			1																



*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												1				Transferred from Surgical side. Large cerebral hernia and pycephaly; supposed to have had a cerebral tumour, but no trace at autopsy.
1												4	1	1		Fatal cases: Case 1. Child <i>et.</i> 12 months; nothing found P.M. Case 2. Man <i>et.</i> 38; nothing found P.M., possibly status epilepticus. Of cases discharged: 1 possibly embolic in a boy of 10 years. Heart suggesting a condition of early mitral stenosis.
1												2				
1				1								6				Ophthalmoplegia 1, readmission 1.
												4	14			Huntingdon's chorea 2, endocarditis 4, history of rheumatism 8. 1st attack 11, 2nd attack 6, 5th attack 1.
1	1			2								16	24			Readmission 1. 6 cases put on Weir Mitchell treatment with good result in 5. For a case of functional dyspnoea see Special Abstract.
2				1								7	5			5 Jacksonian type; 2 cases trephined, 1 with good result. Status epilepticus 1; lumbar puncture performed, and cerebrospinal fluid sterile. Post-epileptic hemiplegia 1.
1	1			2				1				6	2			Of cases discharged: 2 suggested syphilitic thrombosis. Of fatal cases: no P.M. in 1, with a terminal septicæmia, in the other meningo-myelitis with poliomyelitis and softening of cord in dorsal region, diffuse perithecal suppuration, and suppuration in connective tissues and adjacent spine.
				2				1				2	1			Senile paraplegia 1, possibly tumour 2.
												1				De-cerebration. Discharged to Home for the Dying.
												3	1			Laminectomy 1, costo-transversectomy 1. No improvement.
												1	2			Lower extremities chiefly affected 1, and upper 2.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
VIII. DISEASES OF NERVOUS SYSTEM—continued.																						
Tabes dorsalis . . . . .	9	...	...	...	...	...	...	...	...	...	...	1	...	...	...	3	...	...	...			
Insular sclerosis . . . . .	6	...	...	...	...	...	...	...	...	...	...	1	3	...	...	2	...	...	...			
Inco-ordination . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...			
Progressive muscular atrophy . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Caisson disease . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Lateral sclerosis . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Spastic paraplegia . . . . .	5	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...			
Syphilis of spinal cord . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...			
Diphtheritic paralysis . . . . .	3	...	1	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...			
Alcoholic paralysis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...			
Peripheral neuritis . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...			
Cranial nerve palsy . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	2	...	...	...			
Erb's palsy . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Neuritis of arm . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...			
Sciatica . . . . .	7	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...			
Neuralgia . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...			
Myopathy . . . . .	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...			
Mental . . . . .	10	...	...	...	...	...	...	3	2	...	...	1	1	...	1	...	...	...	...			
Sunstroke . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Syncope . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
IX. POISONING.																						
Alcohol . . . . .	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...			
Plumbism . . . . .	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...			
Food-poisoning . . . . .	5	...	...	...	1	...	...	...	1	...	...	...	...	...	...	1	...	...	...			
Hydrochloric acid . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			

*continued.*

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
4				1								8	1			History of syphilis in 6, arthropathies in 3 affecting upper extremity in 1, aortic disease 1, renal calculus 1, and gastric crises 1.
												3	3			Two cases in S. T. H. in previous years, another case had had 2 previous attacks and remissions.
												1				Possibly early insular sclerosis.
3												3				Same case readmitted.
				1								1				In S. T. H. in previous years. Alcohol an important factor.
3												3				1 case in S. T. H. in previous years.
1				1								4	1			History of trauma in 2.
1												2				Erb type.
												2	1			
												2				
1	1			1								2	3			1 case 5th nerve, empyema of antrum. 1 case 5th and 3rd probably syphilitic, 1 Bell's palsy and parotitis.
												2	1			Suture of nerve-trunks; no improvement.
												1				
1	1			1				1	1			4	3			Colon neurosis in 1 case, neurexarrhesis in 1 case; good result.
				1								2				
												1	1			Family history in 1.
								2				4	5	1		Stupor 2, dementia 2, senilitas 2, melancholia 1, simple mania 2. Fatal case: suicide.
1												1				
														1		Child, set. 10 months, admitted moribund; no lesion found P.M.
2	2	1						1				4	2	1		Delirium tremens 1, dementia 1. In fatal case vagi phrenic and recurrent, laryngeal nerves showed well-marked Marchi reaction, and Rolandic areas intense chromatolysis.
				1								2				Colic 1, paralysis 1.
2												4	1			Ice cream 1.
1	1											1	1			1 accidental, 1 suicidal. For 2 other cases see Pyloric Stenosis.

TABLE II—

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
	Total.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>IX. POISONING—continued.</b>																					
Carbolic acid . . .	1													1							
Chlorodyne . . .	1													1							
Acetic acid . . .	1																				
Oxalic acid . . .	3																				
Opium . . .	3																		1		
Camphor . . .	4	2												1							
Belladonna . . .	1													1							
Atropin . . .	1																		1		
Colocynth . . .	1																		1		
<b>X. SURGICAL AND MISCELLANEOUS.</b>																					
Disease of ear . . .	5	1								1				1						1	
Various surgical . . .	18	1		1	1	1				1	1			3	2			2			
Immersion . . .	1																	1			
<b>XI. DISEASES OF THE FEMALE GENERATIVE ORGANS.</b>																					
Salpingitis . . .	5													1				3			
Ovarian cyst . . .	6			1										2				1			
Ectopic gestation . . .	4													2				2			
Disorders of pregnancy	1													1							
Abortion . . .	1													1							
Ruptured uterus . . .	1																			1	
Pelvic abscess . . .	3													1				1			
Pelvic cellulitis . . .	1													1							
Carcinoma of ovary . . .	1														1						

40—				50—				60 and upwards.				Result.				REMARKS.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
																Suicidal.
													1			Suicidal.
								1					1			Accidental.
	1	1							1				1	2		All suicidal.
	1	1											2		1	All suicidal. Fatal case brought in dead.
			1										3		1	Cases discharged accidental. Fatal case brought in dead.
														1		Accidental.
														1		Suicidal.
														1		Accidental.
				1									3	1	1	For a case of Bezold's mastoiditis see Special Abstract.
3				1	1								12	4	1	9 cases transferred to Surgical side. Fatal cases: acute infective osteomyelitis and double sacro-iliac disease with chronic peritonitis.
														1		
																12 cases transferred to Gynecological Ward, and 3 to Surgical side.
	1													5		General peritonitis and pneumonia at right base in fatal case transferred.
	1				1									5	1	Twisted pedicle in 2. Fatal case of malignant teratoma see special report.
														4		Right sided in all, twin pregnancy in 1, abortion after operation.
														1		
														1		Pelvic peritonitis.
															1	General peritonitis.
	1													3		1 tuberculous.
														1		
															1	Left side, metastases pleuræ, peritoneum, and retro-peritoneal glands.

TABLE III.—*Table of Mortality.*

DISEASE.	Age	0-		5-		10-		20-		30-		40-		50-		60-		Total No. of cases in hosp.	Per cent.
	Total.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
GENERAL DISEASES.																			
Measles . . . . .	3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	50
Enteric . . . . .	2	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	...	15	13.33
Diphtheria . . . . .	14	3	9	1	1	...	...	...	...	...	...	...	...	...	...	...	...	42	33.33
Septicæmia . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1	100
Pyæmia . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Acute rheumatism . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	88	1.13
Diabetes . . . . .	3	...	...	...	...	...	...	...	...	1	1	1	...	...	...	...	...	18	16.66
Anæmia . . . . .	3	...	...	...	...	...	...	1	...	1	...	...	...	1	...	...	...	29	10.34
Leukæmia . . . . .	2	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	3	66.66
General and unclassified tubercle . . . . .	11	4	4	1	1	...	1	...	...	...	...	...	...	...	...	...	...	15	73.33
Marasmus and debility . . . . .	7	4	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	23	30.43
Glandular carcinoma . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	100
Ret.-peritoneal growth . . . . .	2	...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	3	66.66
SKIN DISEASES.																			
Dermatitis exfoliativa . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	4	25
DISEASES OF RESPIRATORY SYSTEM.																			
Laryngitis . . . . .	2	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	7	28.57
Bronchitis . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	20	5
Bronchiectasis . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	10	10
Broncho-pneumonia . . . . .	18	10	8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	70	25.71
Acute pneumonia . . . . .	16	1	...	1	1	...	...	4	...	3	2	2	...	1	...	1	...	114	14.03
Phthisis . . . . .	2	...	...	...	...	...	...	1	...	1	...	...	...	...	...	...	...	32	6.25
Empyema . . . . .	5	3	...	...	1	...	...	...	...	...	...	...	...	...	...	1	...	28	17.85
Growth of mediastinum . . . . .	4	...	1	...	...	...	...	1	...	1	...	1	...	1	...	...	...	6	66.66
Pyo-pneumothorax . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	2	50
Malignant disease of pleura . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Obstruct. of bronchus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	2	50
Pulmonary abscess . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	100
DISEASES OF CIRCULATORY SYSTEM.																			
Pericarditis . . . . .	8	1	...	1	2	1	2	...	...	...	...	...	...	1	...	...	...	12	66.66
Mitral . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aortic . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Aortic and mitral . . . . .	9	...	...	...	2	1	1	1	2	1	1	...	...	...	...	...	...	22	40.909
Malignant endocarditis . . . . .	11	...	...	...	1	2	1	3	...	1	...	1	1	1	...	...	...	17	64.705
Aneurysm . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	13	15.38
Arterio-sclerosis . . . . .	8	...	...	...	...	...	...	...	...	...	2	...	3	...	3	...	...	25	32

TABLE III—*continued.*

DISEASE.	Age	0—		5—		10—		15—		20—		25—		30—		35—		40—		45—		50—		55—		60—		Total No. of cases in hosp	Per cent.
	Total.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
DISEASES OF CIRCULATORY SYSTEM—cont.																													
Congenit. heart disease	2	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	7	28.57
Cardiac failure	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Myocarditis	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	4	25
Degen. of myocardium	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	100
Fatty heart	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	100
DISEASES OF DUCTLESS GLANDS.																													
Exophthalmic goitre	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	24	8.33
Addison's disease	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
DISEASES OF DIGESTIVE SYSTEM.																													
Foreign body in pharynx	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Carcinoma of oesophagus	3	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	...	...	11	27.27
Gastric ulcer	7	...	...	...	...	...	...	...	...	2	1	...	1	2	...	...	1	...	...	...	...	1	...	...	...	...	...	55	12.72
Malignant disease of stomach	9	...	...	...	...	...	...	...	...	1	...	1	...	1	...	1	1	3	2	...	...	...	...	...	...	...	...	32	28.12
Gastro-intestinal ulcerative colitis	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	50
Intestinal obstruction (non-malignant)	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	20	10
Intussusception	8	1	6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	19	42.105
Malignant disease of intestine	4	...	...	...	...	...	...	1	...	1	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	16	25
Appendix	11	...	...	1	...	5	1	1	...	1	...	1	...	1	...	1	...	...	...	...	...	...	...	...	...	...	...	177	6.21
Pyloric stenosis	2	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	3	66.66
Tuberculous peritonitis	2	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	17	11.76
Peritonitis	3	1	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6	50
Cirrhosis of liver	7	...	...	...	...	...	...	...	...	...	...	1	2	...	...	1	...	2	1	...	...	...	...	...	...	...	...	34	20.58
Cholelithiasis	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	33	3.03
Malignant disease of liver	2	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	10	20
Malignant disease of gall-bladder	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	2	...	...	...	...	...	...	...	...	...	3	100
Intra-hepatic suppuration	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Malignant disease of pancreas	2	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	5	40
DISEASES OF URINARY ORGANS.																													
Acute nephritis	4	...	...	1	1	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	22	18.18
Chronic nephritis	16	...	...	...	...	2	1	1	1	3	1	2	...	1	3	1	...	...	...	...	...	...	...	...	...	...	...	54	29.63
Carcinoma of kidney	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1	100
Congenital cystic disease of kidneys	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	100
Cystitis	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	50

TABLE III—*continued.*

DISEASE.	Age	0-		5-		10-		20-		30-		40-		50-		60-		Total No. of cases in hosp.	Per cent.
	Total.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.				
DISEASES OF NERVOUS SYSTEM.																			
Meningitis . . . . .	12	7	2	...	1	...	1	...	1	...	...	...	...	...	...	...	...	19	63·15
Tuberculous meningitis . . . . .	9	4	2	1	1	...	...	1	...	...	...	...	...	...	...	...	...	10	90
Cerebral hæmorrhage . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	8	12·5
Cerebral tumours . . . . .	4	...	...	...	1	...	...	...	1	...	1	...	...	...	1	...	...	15	26·66
Convulsions . . . . .	2	...	1	...	...	...	...	...	1	...	...	...	...	...	...	...	...	4	50
Hydrocephalus . . . . .	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	100
Myelitis . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	7	14·28
Meningo-myelitis . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
POISONING.																			
Alcohol . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	7	14·28
Oxalic acid . . . . .	2	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	3	66·66
Opium . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	3	33·33
Camphor . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	3	33·33
SURGICAL.																			
Acute O. M. S. . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	100
Acute infective osteomyelitis . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
Sacro-iliac disease . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	33·33
DISEASES OF FEMALE GENERATIVE ORGANS.																			
Salpingitis . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	5	20
Ruptured uterus . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	100
Carcinoma of ovary . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	1	100
Cystic tumour of ovary . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100
UNCLASSIFIED.																			
Mental (suicide) . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	7	14·28
Syncope . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	100



TABLE IV.—*Cases of Infectious Diseases arising in the Hospital.*

Initials.	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of onset.	Duration of previous residence in hospital.	Result.	Remarks.
J. N.	F.	26 years	—	Erysipelas	Jan. 1, 1905	—	C.	Staff Nurse.
R. B.	M.	57 "	Hemiplegia	"	Feb. 6, 1905	3 weeks	C.	Arose in Arthur.
A. G.	F.	26 "	—	"	Feb. 28, 1905	—	C.	Staff Nurse.
A. F.	F.	14 months	Diphtheria	"	Mar. 4, 1905	15 days	D.	Arose in Luke.
J. N.	M.	65 years	Myelitis	"	May 8, 1905	4 weeks	C.	Arose in George.
M. H.	F.	26 "	—	Diphtheria	Jan. 3, 1905	—	C.	Staff Nurse.
E. W.	F.	4 "	Tuberculous peritonitis	"	Mar. 27, 1905	4 weeks	C.	Arose in Lilian.
P. R.	F.	15 months	Broncho-pneumonia	"	April 9, 1905	4 days	To Fever Hosp.	Arose in Lilian.
H. M.	F.	26 years	—	Nasal diphtheria	April 16, 1905	—	C.	Probationer.
A. L.	F.	14 months	Post-basic meningitis	Diphtheria	April 28, 1905	21 days	D.	Arose in Lilian.
E. B.	M.	14 "	Broncho-pneumonia	"	July 30, 1905	6 days	C.	Arose in Lilian.
L. C.	F.	18 "	Broncho-pneumonia	Nasal diphtheria	Nov. 28, 1905	4 days	C.	Arose in Lilian.
A. F.	M.	31 years	Hernia	Scarlet fever	Jan. 28, 1905	12 days	To Fever Hosp.	Arose in Edward.
B. M.	M.	21 "	Appendicitis	"	Mar. 12, 1905	2 days	C.	Arose in Arthur.
G. L.	F.	28 "	—	"	Mar. 31, 1905	—	C.	"Sister."
F. A.	M.	19 "	Hernia	"	April 7, 1905	3 days	To Fever Hosp.	Arose in Leopold.
C. B.	M.	3 "	Mastoiditis	"	May 22, 1905	4 days	C.	Arose in City.
E. H.	M.	3 "	Sinus of hip	"	May 26, 1905	6 days	C.	Arose in Seymour.
P. H.	M.	3 "	Extroversion of bladder	"	May 29, 1905	7 weeks	C.	Arose in Seymour.
H. T.	M.	19 "	Injury	"	June 7, 1905	8 days	C.	Arose in City.
A. P.	M.	18 "	Hernia	"	June 11, 1905	2 weeks	To Fever Hosp.	Arose in Leopold.
W. W.	M.	2½ "	Hare-lip	"	June 21, 1905	10 days	"	Arose in Seymour.
B. R.	F.	26 "	—	"	Sept. 25, 1905	—	C.	Staff Nurse.
M. N.	F.	26 "	—	"	Dec. 18, 1905	—	C.	Staff Nurse.
W. B.	F.	25 "	—	Varicella	Feb. 13, 1905	—	C.	Staff Nurse.

TABLE IV—*continued.*

Initials	Sex.	Age.	Disease for which admitted.	Disease originating in hospital.	Date of onset.	Duration of previous residence in hospital.	Result.	Remarks.
I. B.	F.	2 years	Enteritis	Varicella	Feb. 28, 1905	2 days	C.	Arose in Lillian.
A. C.	M.	18 months	Burn	"	Nov. 14, 1905	4 days	C.	Arose in Seymour.
M. G.	F.	26 years	—	"	Nov. 22, 1905	—	C.	Staff Nurse.
A. B.	M.	3 "	Talipes	"	Nov. 23, 1905	7 days	C.	Arose in Seymour.
I. H.	F.	26 "	—	Enteric fever	May 15, 1905	—	C.	Staff Nurse.
J. F.	M.	2 "	Broncho-pneumonia	Pertussis	Feb. 24, 1905	2 days	Sent home	Arose in Lillian.
C. I.	F.	2 "	Broncho-pneumonia	"	Sept. 10, 1905	1 day	"	Arose in Lillian.
L. S.	F.	6 "	Pneumonia	"	Sept. 28, 1905	2 days	"	Arose in Charity.
M. L.	F.	26 "	—	Parotitis	April 14, 1905	—	C.	Staff Nurse.
H. M.	F.	18 months	Broncho-pneumonia	Measles	July 27, 1905	2 days	Sent home	Arose in Lillian.
J. H.	M.	3 years	Enteric fever	"	Dec. 23, 1905	3 months	C.	Arose in Lillian.
H. R.	M.	2 "	Broncho-pneumonia	"	Dec. 25, 1905	3 weeks	D.	Arose in Lillian.
W. K.	M.	16 months	Bronchitis	"	Dec. 25, 1905	3 weeks	C.	Arose in Lillian.
C. N.	F.	6 years	Caries of spine	"	Dec. 26, 1905	2 months	C.	Arose in Lillian.
C. W.	M.	3 "	Empyema	"	Dec. 26, 1905	3 months	C.	Arose in Lillian.
H. R.	M.	2 "	Empyema	"	Dec. 27, 1905	2 months	D.	Arose in Lillian.
M. L.	F.	8 months	Broncho-pneumonia	"	Dec. 29, 1905	2 months	D.	Arose in Lillian.

## SPECIAL ANALYSES AND ABSTRACTS.

---

### 1. DIPHTHERIA.

Forty-two cases were treated to a termination during the year 1905. All except 3 were given antitoxic serum. Of the cases not treated with serum 1 was a very mild case in a boy of 12 years, 1 was a case of nasal diphtheria, and 1, admitted with urgent dyspnoea, died while tracheotomy was being performed.

The mortality worked out to 33·3 per cent. (average mortality St. Thomas's Hospital since introduction of antitoxic serum in 1895—28·8 per cent). The majority of the cases were treated with serum prepared at the Lister Institute.

An initial dose of 2000 units was given to 2 cases. To 1 admitted moribund intra-venously in a pint of normal saline, to 1 as a prophylactic dose, two other members of the family having died of the disease in a malignant form during the week. The usual initial dose was 6000 units, the largest given was 16,000 units. Supplementary doses were given once in 17 cases, twice in 4 cases, and three times in 1. Largest total amount given to any one case was 24,000 units. Three cases had this, 2 in 2, and 1 in 3 doses.

A rash appeared in 17 cases, on the 5th day in 1, on the 6th day in 5, on the 7th day in 4, on the 8th day in 4, on the 9th day in 2, and on the 10th day in 1. In no cases were there joint pains. All cases were submitted to bacteriological examinations. Diphtheria bacilli were found in 31.

Tracheotomy was performed in 9 cases with 3 recoveries and 6 deaths. Intubation was performed in 6 cases with 4 recoveries and 2 deaths. One other case was intubated to overcome difficulty in removal of tracheotomy tube. Of the fatal tracheotomy cases there was broncho-pneumonia in 2, and in all membrane extended down trachea. Of the fatal intubated cases there was ulceration at site of intubation, pulmonary abscess and empyema in 1, and in 1 the membrane extended down to smallest naked-eye bronchi.

The nose was involved in 7, and the ear in 2 cases. Paralysis of palate occurred in 3 cases, and of legs in 2. Albuminuria noted in 15 cases.

Of cases discharged broncho-pneumonia occurred in 2, bronchitis in 3, cardiac failure in 2, impetigo in 1, retro-pharyngeal abscess in 1, pus infection of skin in 2, whooping-cough in one, and rickets in 1. One case with broncho-pneumonia on admission recovered after intubation.

In the following table of fatal cases it will be seen that in 10 out of 14

Age.	Length of history.	Dose of antitoxin.	Tracheotomy or intubation.	Duration.	Remarks.
4½ months	5 days	8,000 units	Intubation	6 days	Membrane from vocal cords to smallest naked-eye bronchi.
8 "	4 "	10,000 "	"	22 "	Ulceration in relation with tube; pulmonary abscess, and empyema.
1½ years	24 hours	24,000 "	Tracheotomy	19 "	Erysipelas, broncho-pneumonia, and suppurative pericarditis. Anti-streptococcus serum administered.
1½ "	72 "	8,000 "	—	—	Admitted for meningitis. Contracted diphtheria in hospital. Death due to meningitis. Staphylococcus albus grown in pure culture from cerebro-spinal fluid before development of diphtheria. P.M.—Post-basic meningitis, internal hydrocephalus, and bronchitis. "Bacteriological diphtheria."
1½ "	96 "	8,000 "	—	23 days	Tuberculous broncho-pneumonia. Nasal diphtheria.
1½ "	6 days	6,000 "	—	9 "	Disseminated broncho-pneumonia.
1½ "	72 hours	6,000 "	—	5 "	Bronchitis and cardiac failure.
2½ "	24 "	—	Tracheotomy	1 day	Admitted moribund. Pre-existing bronchitis.
2½ "	7 days	2,000 "	—	7 days	Admitted moribund. Antitoxin given intra-venously. Ulceration of esophagus and of tonsil, soft palate and naso-pharynx.
3½ "	18 hours	16,000 "	Tracheotomy	24 hours	Malignant attack. 8000 units of antitoxin intra-venously. Total duration under 24 hours.
5½ "	24 "	18,000 "	"	12 days	Sister of above. Broncho-pneumonia preceded attack of diphtheria. P.M.—Large tonsillar abscess and broncho-pneumonia.
4 "	48 "	16,000 "	—	3 "	Nasal, facial, and laryngeal; also disseminated broncho-pneumonia.
4 "	72 "	12,000 "	Both	3 "	Admitted moribund. Attempted intubation without anæsthetic.
6 "	18 days	21,000 "	Tracheotomy	36 "	Nasal diphtheria 19 days before admission spread to trachea. A Mongol. Convulsive attacks and broncho-pneumonia.

history of illness exceeded 3 days. Two cases were admitted moribund, 1 other case was of malignant faucial type, 2 were cases of nasal diphtheria, death being due to complications; 1 case was really post-basis meningitis, bacteriological diphtheria occurring as an episode.

## 2. ENTERIC FEVER.

Number of cases 15. Deaths 2. Mortality 13·2 per cent.

The 15 include 1 case admitted on November 7th, 1904; this case recovered. The number is probably the smallest on record, the average for the previous 10 years being 58·6. There was not a single admission for this disease between November 11th, 1904, and May 18th, 1905 (a member of Nursing Staff).

The cases admitted during 1905 were distributed as follows:—May 1, June 2, July 2, August 4, September 2, October 1, and November 2. Details as to age- and sex-incidence are given in Table II.

Length of history on admission 1st week 5, 2nd week 7, 3rd week 2, 4th week 1 (probably admitted during relapse).

An eruption appeared in 8 cases. The spleen was palpable in 11. Head-ache was a prominent feature on admission in all but 1 case. Rigors occurred at onset in 2, diarrhoea in 4, constipation in 3, vomiting in 4, abdominal pain in 6, bronchitis in 6, and broncho-pneumonia in 1.

Only 2 relapses were recorded, 1 on 36th day after 3 days normal temperature, one on 27th day without interval. Duration of relapse 9 days in one case, and 15 days in the other. Both recovered. There was 1 case of post-typhoid pyrexia.

The following complications were observed:—Bronchitis 9, broncho-pneumonia 2, cardiac failure 1, meteorism 1, hæmorrhage 3, pus eruptions occurred in 2, 1 case had an abscess in the buttock, and 1 case periostitis; diarrhoea was a prominent feature in 4.

*Chronological table of complications other than relapse.*—1st week: Bronchitis 6, diarrhoea 2. 2nd week: Bronchitis 3, diarrhoea 2, hæmorrhage 1, meteorism 1, broncho-pneumonia 1. 3rd week: Hæmorrhage 1. 4th week: Broncho-pneumonia 1 and hæmorrhage 1. Abscess in buttock occurred in 5th week, periostitis of tibia in 8th week, and a severe case with post-typhoid pyrexia had cardiac failure. The majority of the cases were mild, and the complications given above were contributed by a few.

The serum of all cases was examined. The result was negative throughout in 2, both of whom recovered. In the 1 case the last return was on the 17th day of the mild attack, and in the other, a man of 50, in whom broncho-pneumonia was a conspicuous feature, there was no reaction to 1 in 20 on the 30th day. The 32nd day was the latest at which a positive return was obtained after several negatives. There was no positive return in any case which was not clinically enteric. One mild case gave a positive return for both typhoid and paratyphoid.

The two fatal cases occurred in August and November. In the one there was a small hæmorrhage on the 30th day and death occurred on the 33rd

with confluent broncho-pneumonia. In the other case admitted very ill with 10 days' history death occurred on the 19th day. There was gross bronchitis, and ulceration extended from the last 18 inches of ileum down to the rectum.

Average duration of stay in hospital of cases that recovered 55 days, of fatal cases 21 days. Owing to the small number treated 3 bad cases have made the average duration of stay in hospital rather misleading.

### 3. A FATAL CASE OF ACUTE RHEUMATISM.

L. W.—, *æt.* 12. The patient, a girl, having enjoyed uniform good health apart from an attack of tonsillitis 3 weeks before admission. Her illness began with pain and swelling of the right ankle-joint, and in the course of 3 days other joints in both upper and lower limbs became involved. On the 3rd day a pain in the chest arose, and she came up to the hospital. She is described as looking extremely ill, having several joints affected and well-marked pericardial friction. The heart apex-beat could be felt just outside the left nipple in the 5th interspace, but there was no right-sided enlargement to percussion. The pulse was 120, feeble but regular. The temp.  $103.4^{\circ}$ . There was also a trace of albumen in the urine. Treatment with salicylates was at once commenced, and a blister applied over the area of friction. At first the disease ran a fairly usual course, the pain being soon controlled, and the temperature reaching normal within 48 hours. The pulse-rate, however, continued rapid—about 115—and the child seemed ill out of proportion to the length of the history and the objective symptoms. Strychnine was given as though the amount of friction diminished the heart began to dilate further. The conditions did not suggest effusion. The temperature did not remain at normal, but by the middle of the 3rd day was again up to  $101^{\circ}$ , and ranged about this level for the next 6 days. The pericardial friction continued to be audible, and the pulse-rate averaged 120. The joint pains were not severe. On the 8th day pain in the right side on respiration was complained of, and on examination there were physical signs of consolidation of lung in the axilla of that side. On the evening of the 9th day there was much pain mostly referred to cardiac area. The patient was very restless, and the temperature went up to  $105^{\circ}$ , and the pulse to 160. The temperature was reduced by sponging, but the pulse-rate remained very rapid, and the patient sank and died on the 10th day. The seizure commenced when the patient, who had had no previous illness, was in good health, and the total duration was only 13 days.

*Post-mortem*.—On exposure of the thoracic viscera a syringe full of blood for bacteriological examination was first withdrawn from the heart. The pericardial sac was then opened, and found to contain 8 oz. of fluid. The pericardium was thickened, covered with shaggy lymph, and the heart presented the "cor villosum" appearance. The organ itself weighed  $9\frac{1}{2}$  oz. The walls were not thickened, but were pale and somewhat softened. On the mitral valve were recent small vegetations all round the edges, but no old

disease and no stenosis. The other valves appeared healthy. The pleural sacs appeared normal, and there was neither fluid nor adhesions. The lungs were deeply congested, and in the lower part of the right upper lobe was a wedge-shape hæmorrhagic infarct. Nothing else of note was made out, the intra-cranial contents appeared normal.

On bacteriological examination 5 c.c. of heart blood gave a good growth of *Staphylococcus albus*. Microscopically the solid lung was a hæmorrhagic infarct, and the wall of the left ventricle showed much inflammatory exudate on the surface with round-celled infiltration of the adjacent heart muscle. Very few polynuclear cells were seen.

#### 4. A FATAL CASE OF SPLENIC ANÆMIA.

J. S—, æt. 23, birdcage-maker. This man was first an in-patient at this Hospital in November of 1900. He gave the following history:—Had been in perfectly good health till the last 8 months when he noticed a rash on his legs. This was followed 2 months later by a large nasal epistaxis. Apart from these episodes he had been in good health up to the last 4 weeks when for the first time in his life he became jaundiced, and at the same time noticed that his abdomen was swelling. He was then described as well nourished and without obvious distension of abdomen, the liver and spleen were both palpable 2 inches and 3 inches below costal margin respectively. There was a bright hæmorrhagic rash over the front of both legs. The blood was examined microscopically and found normal, the red cells numbering 5·5 millions per c.mm. There was no evidence of syphilis either direct or indirect. There was a strong family tendency to nasal epistaxis. He remained in hospital 3 weeks, the jaundice, which was never at all marked, disappeared, and at no time was there any albuminuria. Temperature practically normal throughout. After leaving hospital he remained perfectly well until September, 1905, apart from occasional slight nasal epistaxis. At this time he was taken fairly suddenly with headache and general malaise, and was obliged to keep in bed. A rash appeared which started round his ankles. His blood was said to have given a positive result to Widal's typhoid reaction, and he was sent to a fever hospital as a case of enteric, whence he was subsequently transferred to St. Thomas's. He is now described as very pale with a faint icteric tint, and over the whole body were scattered pink papules fading on pressure. The spleen was very large, and came down to the level of the iliac crest. The liver could also be felt 3 fingers' breadth below the costal margin. The pulse-rate was 120, and the temp. 105°. The fundi were examined, and hæmorrhagic retinitis was found to obtain in the left eye; there was also a small hæmorrhage in the right eyelid. Widal's serum reaction was returned as negative, while examination of the blood showed red cells to number 4·75 millions, and there was marked leukopænia; a few macrocytes were seen. Rouleaux formation was perfect, fibrin formation increased, and there was some poikilocytosis. The percentage of leucocytes was ordinary. The

patient continued to be very ill, temperature ranging up to  $106^{\circ}$ , and only controllable by sponging (this control was more apparent than real as the character of the temperature-chart for the last 14 days, during which sponging was discontinued, was very similar to that of the first 3 weeks, when it was had recourse to twice daily). Patient went steadily down hill, jaundice became more marked, signs of free fluid appeared in the abdomen, numerous subconjunctival and petechial hæmorrhages occurred, and there was intractable diarrhoea. For the last 2 weeks of life temperature ranged rather lower—from  $98^{\circ}$  to  $103^{\circ}$  instead of to  $105^{\circ}$ . Patient was semiconscious, and difficult to feed. The blood was again examined 4 days before death, the red cells were 4.5 millions, the leucocytes had increased in number, the increase being mainly in polynuclear neutrophile cells, which went up from 62 per cent. to 89 per cent. in a white-cell count, rising from 3000 to 6000. Rouleaux formation remained good, fibrin formation had now disappeared, "ghosts" were very numerous, and poikilocytosis was present. Macrocytes and microcytes were now numerous. No nucleated red cells were seen in any of the 3 counts. Subcutaneous hæmorrhages became more marked, and patient died on the 35th day after admission. Total duration of symptoms 5 years 10 months. Death in 2nd attack.

*Post-mortem.*—The body was poorly nourished, the subcutaneous fat was of a bright yellow colour; no enlarged lymphatic glands were made out. The thoracic contents appeared normal. The peritoneal cavity contained some few pints of clear serous fluid. There was no affection of peritoneum. The liver weighed  $44\frac{1}{2}$  oz. Its surface was puckered and drawn in by bands of fibrous tissue, the capsule was thickened, and the cut surface bile-stained and markedly fibrotic. The spleen weighed  $28\frac{1}{2}$  oz., there was no periliinitis, the substance was firm, and it appeared ordinary to the naked eye. Nothing else abnormal was made out; the hæmolymp glands were considered.

*Microscopical report.*—The liver showed mixed cirrhosis, the capillaries were congested, and round-celled accumulation abundant. The spleen, in addition to chronic fibrosis, showed diffuse changes, hæmorrhagic as well as chronic inflammatory. In some places there was evidence of recent inflammation.

## 5. A CASE OF GENERAL TUBERCULOUS LYMPHADENITIS.

A. O'N—, æt. 19. The patient, a girl, had scarlet fever at the age of 6 years, and after the attack enlargement of the lymphatic gland was noticed in various parts of the body, but especially in the neck. At the age of 11 years she was admitted to this Hospital, and caseous cervical glands removed from both sides. On her discharge she was able to go to school, and continued attending until her fifteenth year, when she had to give up owing to the weak state of her health. From that time until about 12 months before present admission she remained in much the same condition, i. e. able to get about, but unable to do any work. At this time



she first began to suffer from diarrhoea and vomiting, the latter having no relation to meals. This condition persisted until she came to Hospital, having remained in bed for the previous two weeks. On examination she was found to be extremely emaciated, and masses of glands could be felt on both sides of the neck and both axillæ and groins. On palpation masses could also be felt in both iliac fossæ. There were, too, physical signs of consolidation at the apices of both lungs. The pulse was 120, and the temperature varied between normal and 100°. The diarrhoea and vomiting could not be controlled, and the patient died on the 17th day.

*Post-mortem.*—The subject was emaciated to the last degree, and there were masses of enlarged glands in all the superficial areas. On examination of the abdominal cavity the omentum was seen to be adherent at many points, while coils of small bowel were closely matted together. The large bowel was alternately constricted and dilated, its walls appearing much thickened. There were no obvious tubercles on the peritoneum, the whole cavity being the site of gross chronic peritonitis. The mesenteric glands were enlarged, and the whole pelvis was filled up with a similar mass. On examination of small intestine as far as the first portion of the ileum there was nothing of note apart from moderate congestion and swelling of lymphoid tissue. At this point the glands in the bowel wall began to be markedly enlarged and hard, while commencing four feet from the ileo-cæcal valve some glands had ulcerated through into the cavity of the bowel. There was no tuberculous ulceration of the ordinary type in the small intestine. The large intestine displayed much ulceration of both types, there being both well-marked affection of solitary follicles and numerous large areas where affected glands had burst through. At many points there was scarring and annular contraction, while over large areas extending right down to anal canal the mucous membrane was destroyed; at two points it had come away from the bowel wall, forming a sieve-like diaphragm. The pancreas showed some caseating areas, but this rather appeared due to invasion by retro-peritoneal glands, which were much enlarged and caseous, than to direct affection. The spleen, kidneys, suprarenals, and pelvic organs appeared to have escaped. The glands all had a hard cheesy homogeneous character. There was a moderate amount of calcification, and comparatively little fibrosis or necrosis apart from the great bowel. The liver was tested for albuminoid change and gave no reaction. The pleuræ showed few adhesions, mostly round apices and anterior border. The lungs were small, and quite hard at the apices. On section the upper two inches were seen to be sharply marked off, and quite solid and airless; the change was mainly fibrous, but there were also cavities filled with cheesy matter and a little calcification. No trace of miliary tubercle. The thymus was present, but not markedly enlarged, and appeared normal on section. Microscopically the glands showed caseous tuberculosis with good giant cells. The pancreas only showed small celled infiltration.

## 5. A CASE OF GLANDULAR CARCINOMA.

R. F—, male, æt. 31. Admitted June 15th, died September 16th. Patient had had syphilis 4 years before, and was in this Hospital for pneumonia in September, 1904, when there was no evidence of present condition. About Christmas, 1904, he noticed lumps in his neck, had vague pains all over, and had to give up work. On present admission he was emaciated, and appeared to be in much pain. There were masses of enlarged glands on the left side of the neck and in the left supra-clavicular triangle. No other enlarged glands made out. The sternum presented two bony prominences corresponding to 2nd and 4th ribs, and there was marked hyperæsthesia over the front of the chest. The heart was not enlarged to the left, but there was dulness behind the lower half of the sternum. There was also dulness on percussion over the bases of both lungs. Sputum was abundant, and microscopically it was muco-purulent. No tubercle bacilli were seen. The masses on the sternum increased rapidly in size, and there was some pulsation in them. An exploratory needle was put into right base behind, but no fluid was found. There were attacks of dyspnoea usually twice a day. No change occurred until the patient had been in nearly a month, except that egg-shell crackling was obtained over the sternal tumours, and a lump appeared just about the ensiform cartilage; a day later another lump appeared on the occipital bone. Lumps now appeared almost daily at the costochondral junctions on both sides, and later at the sterno-clavicular articulations. At this time crepitus synchronous with heart sounds became audible over left 5th chondro-sternal junction. Intractable diarrhoea developed, there was difficulty in swallowing, and the sternum was obviously moving in two separate portions. Death occurred on the 93rd day after admission. The duration of symptoms was 9 months. The blood was examined and found normal apart from slight secondary anæmia, and some increase in percentage of polynuclear neutrophile cells.

*Post-mortem.*—The body was profoundly emaciated. At the junction of ribs and cartilages were a series of small tumours arising from bone and not from cartilage. On the right side they were present at every costochondral junction, with a large one at the inner end of the clavicle. On the left side the inner end of the clavicle showed a small one, and the ribs down to the 5th were involved. When the thoracic organs were removed other growths were seen in the ribs farther back. A large tumour was present in the upper part of the middle piece of the sternum, where a spontaneous fracture had occurred. There was a small tumour at junction of gladiolus and xiphisternum. On section the tumours were soft red in colour, and the bone was eroded by the growth, which in many places had replaced rib altogether. There were several spontaneous fractures.

The mediastinal glands were much enlarged and continuous with glandular mass in the left supra-clavicular triangle. The glands presented no definite structure, all being reduced to a cheesy mass. No suppuration or hæmorrhage had occurred.

The pleuræ contained no free fluid, but there were numerous adhesions.

The lungs were everywhere studded with minute white growths.

The retro-peritoneal glands were enlarged into enormous masses, having the same character as those in the mediastinum.

The liver presented several circular localised deposits of growth nowhere reaching the surface.

The supra-renals were in close proximity to masses of retro-peritoneal glands, and both had been invaded by growth, their normal structure being almost entirely replaced. Nothing else of note made out.

Microscopically the liver, glands, lung, adrenals, and bone were all glandular carcinoma.

Examination of bone marrow: The femur marrow consisted of yellow fat; no leucocytes were seen. The rib marrow: Portions of growth were present in the regions of the bone tumours, while the colour of the more distant marrow was deepened.

Differential count of 500 cells.

Small mononuclear	.	.	212	.	42.4 per cent.
Large	„	.	112	.	22.4 „
Large hyaline	.	.	4	.	0.8 „
Neutrophilic myelocytes	.	.	153	.	30.6 „
Horse-shoe type	„	.	4	.	0.8 „
Eosinophilic	„	.	14	.	2.8 „
Horse-shoe type	„	.	1	.	0.2 „

Seven normoblasts and 3 megaloblasts.

## 6. AN EMBOLIC ANEURYSM SIMULATING SARCOMA OF FEMUR.

J. O. B—, æt. 50. Admitted July 11th, died November 13th. Patient was healthy up to 7 years ago, when he was seized while at work with a right-sided hemiplegia; great pain accompanied the attack, and he was in bed for a month. There was some incontinence of fæces and urine, headache, and spastic convulsions. He was in Hospital for a month, and at the end of that time went out much improved, and was able to work again. There was some weakness of right arm and leg for two or three years, but ultimately he became quite well, and remained so until November, 1904, when he began to have pains all down the right side. His condition became gradually worse until March, 1905, when one night in bed he had great pain in the right thigh, which suddenly swelled up, and, according to his account, became black and blue. He went to another hospital, where he was at first regarded as a case of malignant endocarditis and embolic aneurism, but later as sarcoma of femur. He got no better, the thigh which was 25 inches round on admission increasing to 27 inches. On admission at this Hospital he is described as looking pale and ill with slight cyanosis. Over the upper third of the right femur was a large swelling measuring  $27\frac{1}{2}$  inches round. It was hard to the touch, and no

fluctuation or pulsation could be detected. The limb below was cedematous. The edge of the liver was palpable, and masses were felt in the abdomen below the umbilicus. The heart's apex could be felt in the 5th interspace in the nipple line. It was not otherwise enlarged. A double murmur could be heard in the first right interspace near the sternum. Patient's speech was very slow, and he was markedly languid. There was, however, no obvious wasting or history of loss of weight. Until November 9th his condition altered but little; the temperature, which was  $101^{\circ}$  on admission, ranged regularly between normal and that level. There was a certain amount of pain in the leg, but the tumour did not increase in size, and no other tumours appeared. At the beginning of November he began to complain of pain on passing water, and a catheter had to be used once or twice. On Wednesday, October 29th, a purpuric eruption appeared all over the body. On November 11th a pulsating swelling appeared over the origin of the ulnar artery. An examination of the blood made on November 3rd showed only secondary anæmia and leukopænia. Death on November 13th.

*Post-mortem.*—The heart weighed 22 oz., and was of oblong type; the aortic valves were incompetent to the water test, and the cusps were fringed with exuberant granulations; one had partly disappeared. The granulations continued without a break all over the ventricular aspect of the aortic cusp of the mitral valve. In this position they were nearly all pedunculated. The centre of the mitral cusp projected as a small globular aneurism into the auricle; the chordæ tendinæ were also involved. The other valves were healthy. The spleen was large, and showed the scars of numerous old infarcts; the right kidney was very movable, and lay on the pelvic brim, where during life it had posed as enlarged glands secondary to the supposed sarcoma of femur. Dissection of the large swelling of the thigh showed it to be an aneurismal sac lying in the intermuscular planes. The superficial and deep femoral vessels, the anterior crural nerve, and saphenous vein were all in front of the sac. 96 oz. of laminated mixed with recent clot were removed from the cavity. The latter was found to communicate with the deep femoral artery close to its termination. A large spur of periosteal bone projected from the inner aspect of the shaft of the femur, and practically half the femoral shaft was rough and bare where the sac had lain on it. A small aneurysm projected from the upper part of the right ulnar artery. On examination of the brain the arteries at the base were all found to be pervious, the pre- and post-central convolutions of the left side appeared somewhat attenuated, and there was a small soft patch on the under surface of the right temporo-sphenoidal lobe. The interior of the brain appeared to be healthy.

## 7. A REMARKABLE HEART; STATUS EPILEPTICUS.

R. M.—, æt. 27, female. Admitted August 16th; died August 26th. Patient has all her life suffered from "pains in her heart" and dyspnœa on exertion; nevertheless, she worked for some time as a laundress, and before

that was in service for 5 years. She had her first attack of serious heart trouble 6 years before admission, and since then has had three similar attacks, the last two accompanied by dropsy. The last attack was 18 months ago. The present seizure came on a week before she came to this Hospital. On admission she was short of breath and slightly cyanosed. There were several shallow, partly healed ulcers on the face. The pulse was 108 and irregular, and there was considerable oedema of legs. The cardiac impulse was diffuse and palpable in the 3rd, 4th, 5th, and 6th inter-spaces. It extended  $1\frac{1}{2}$  inches outside the left nipple line. Dulness began above at 3rd rib, and extended  $\frac{1}{2}$  inch to the right of the sternum. On auscultation a double murmur was audible everywhere, and the 2nd sound at the right base was poor. The liver edge could be felt  $\frac{1}{2}$  inch above the umbilicus. There was some shifting dulness in the abdomen. The patient improved till August 25th, when she had a fit taking the form of general convulsion, during which she bit her tongue badly. A succession of these fits followed, and she died next day.

*Post-mortem.*—The subject was well nourished. There was a little fluid in the left pleural sac and in the peritoneal cavity, but no gross water-logging. The heart presented almost every possible lesion. There were gross old-standing pleuro-pericardial adhesions, general and more recent cardio-pericardial adhesions. The heart itself, which weighed 19 oz., was of oblong type, and showed dilatation and hypertrophy of all chambers. The auricular appendices were dilated, and contained the ordinary red clot, but no old adherent clot. The mitral valve was of button-hole type, and the tricuspid was also stenosed with adherent curtains, only measuring 3 inches in circumference. The aortic orifice was much stenosed, the cusps all being calcified and adherent, presenting too a few recent vegetations. Lastly, there was marked sclerosis of the pulmonary cusps. The muscle appeared to be in good condition. The liver weighed 72 oz., but was less "nutmeg" in character than might have been expected. The organs were all cardiac, but not markedly so. The brain was quite normal, and there was no sign of embolus or hæmorrhage. Had it not been for the epileptic seizure the patient's condition would not have led one to expect an imminent fatal termination, despite the condition of the heart as described above.

*Note.*—The auscultatory signs have not been given in detail for obvious reasons.

## 8. A CASE OF CHLOROSIS AND THROMBOSIS SUGGESTING AN ACUTE ABDOMINAL LESION.

C. S—, æt. 17, married. Quite well until 7 weeks before admission, when she had to keep her bed owing to an injury to her knee. One result of this was constipation, relief of which by purging was followed by spasms of abdominal pain occurring daily up to admission. This pain was felt mostly in right iliac fossa and under right costal margin, and was rendered worse on taking a deep breath. She had had several fainting attacks. On admission she was described as looking ill and very pale, with a temperature

of 103°4', pulse 112, resp. 46. The tongue was furred. She complained of abdominal pain, and of the fact that her bowels were only opened by medicine. The movement of the abdomen was confined to the upper part, and was accompanied by pain; the walls were held rigid, it was resonant all over, and nothing abnormal was made out on palpation. On vaginal examination there was tenderness and resistance on right side, but nothing definite was made out. Nothing abnormal was found in the chest. The temperature came down to normal 4 days after admission and pain disappeared. On getting up it returned again, and there was an attack of faintness. This attack of pain lasted 3 days. The blood was typically chlorotic. The bowels were successfully regulated, and she left hospital on August 30th, after being in three weeks. On September 1st she noticed that her left leg was slightly swollen. This swelling increased, and she was readmitted on September 7th, with thrombosis of the left femoral vein. She was discharged on October 11th in good health. It seems possible that there was thrombosis of one of the iliac vessels on first admission.

#### 9. A CASE OF MITRAL STENOSIS.

L. H—, æt. 46, female. Admitted September 15th; discharged October 21st. The patient had had 2 attacks of chorea in childhood, but there was no history of rheumatism. Twenty years before admission she was in this Hospital for cardiac failure and dropsy following a pregnancy. Her condition on admission is described as follows:—Swelling of abdomen and legs, accompanied by shortness of breath and vomiting for 5 months. The cardiac dulness began above at 3rd rib, and extended to left nipple line, where apex was situated in 5th interspace. To the right it was 1 inch to right of sternum. There was a presystolic thrill and double murmur at the apex. Paracentesis abdominis was performed, and the edge of the liver—hard and smooth—was made out at the level of the umbilicus. She was much relieved, and, when discharged, went back to her regular housework. For 16 years she walked the earth on her lawful occasions with this liver, and then in 1901 was admitted the second time with dropsy and cardiac failure. The state in 1886 would have done perfectly well in 1901, and she again settled down—this time without tapping—and was discharged after being in hospital four weeks. This time she kept well until July, 1905, when she again noticed shortness of breath and swelling of legs, and came up to hospital 2 months later. She is described as sitting up in bed, having a slight icteric tint, and being markedly cyanosed. The area of cardiac dulness is still as in 1886. The liver edge was felt about 2 inches above Poupart's ligament. There was some shifting dulness in the abdomen. By October 20th the patient had once more settled down, and went home. This remarkable woman had a bad attack of cardiac failure 20 years ago, and was discharged with well-marked mitral stenosis and her liver down to her umbilicus, and is still able to attend to her household duties.

## 10. TWO UNUSUAL CASES OF PNEUMONIA.

(a) *A Case of Wandering Pneumonia and Acute Transitory Nephritis.*

C. E—, male, æt. 29. Admitted June 6th; discharged September 6th. The patient had always enjoyed good health till 3 days before admission, when he had a rigor and pains all over, followed by an acute pain in the right side of his chest. On examination the face was flushed, tongue furred, resp. 40 per minute, pulse 120, and temp. 102°. There were physical signs of consolidation corresponding to middle lobe of right lung. The urine contained a considerable quantity of albumen, also hyaline granular and epithelial casts. On the 3rd day after admission, or 7th of disease, an area of crepitations was found in left axilla at about nipple level, and on the following day this area became dull on percussion. The patient now began to bring up typical rusty sputum, in which were innumerable diplococci, but no tubercle bacilli. In the course of the next four days the dulness in left axilla gradually cleared up, and a dull area appeared at left base; at the same time the right lung was becoming resonant over the affected portion. The casts had now disappeared, though there was still a trace of albumen in the urine. On June 19th the dulness over the right middle lobe had cleared up, but dulness had developed at right base. The urine was now clear of albumen. On June 20th an exploratory needle was put into right base, but no fluid was found. On June 22nd there was dulness over both bases, and a dull area just above 4th rib on the left side in front. On June 28th a dull area appeared behind 4th rib in front. By July 3rd dulness at left base had cleared up. By July 16th all areas of dulness had cleared up except at right base, but crepitations could still be heard over many parts of both lungs. The right base gradually cleared up, but the temperature did not become normal until July 24th, after patient had been on the balcony for 2 weeks. From admission on June 6th until July 12th, when he went on to the balcony, the evening temperature was between 101° and 102°. After the first 4 days it was never above 103°. Patient was discharged on September 6th, apparently in robust health, having gained 1½ stone. There were still a few crepitations at extreme bases on both sides.

(β) *Obstruction of Bronchus? Subacute Indurative Pneumonia.*

E. W—, male, æt. 52. Admitted May 30th. The onset was insidious. The patient, who had enjoyed good health since smallpox when 23, was in full work as driver of a stationary engine, when, three months before coming to the hospital, he noticed that he was losing flesh and getting weak. He had a little cough, not severe, and brought up no sputum. He got gradually worse, and after four weeks had to give up work. The cough increased in severity and he began to bring up frothy sputum. A month before admission he had acute pain on the left side, of sudden onset. On examination he appeared ill, and there was flattening and impaired move-

ment over the upper part of the left chest. On percussion the note over this area was impaired as low as the fourth rib, over the rest of the chest it was normal. Over the dull area the breath sounds were loud and tubular, while vocal fremitus and vocal resonance were increased. Whispering pectoriloquy was heard and a few crepitations after coughing. An exploratory trocar was inserted into this area. No fluid was found but the trocar was pushed into lung and a pneumothorax resulted. This obscured all physical signs for some time. When it cleared up the note down to the fourth rib was again impaired, but while breath sounds and vocal resonance were still present they were definitely impaired. When patient left hospital on July 25th this condition was not much altered except that breath sounds are described as absent between second and fourth ribs on the left side. The blood showed a simple anæmia of moderate severity. An X-ray examination showed that the shadow of the left lung, except at extreme apex and base, was as dense as that of the heart. Patient was at a convalescent home till August 11th when he was re-admitted. He had lost weight, looked more ill, and his mental condition was bad. The physical signs in the chest were unaltered. Diarrhoea and vomiting developed, and he died on the 20th day after readmission.

*Post-mortem.*—On opening the chest the upper lobe of the left lung was seen to be small, hard and adherent to the anterior chest wall. The left lower lobe was hypertrophied as was the right lung. There were no adhesions except around the left upper lobe, and these were easy to separate and must have been fairly recent. The lungs were then removed, and an attempt made to pass a bullet-probe down the left upper bronchus. This failed, partly owing to a thickening and narrowing of the tube and partly owing to a plug of débris. No foreign body was found (X-ray had suggested none). The left upper lobe was then cut open and found full of small cavities containing pus. The bronchi were also full of purulent matter. There was no offensive smell and the whole lobe was sealed off by the plug in main upper bronchus. The remainder of the lung and other organs were normal. Microscopically the lung tissue was collapsed and fibrosed and there was some dilatation of small bronchi. No evidence of new growth.

*Note.*—The whole illness can hardly be accounted for by the plugging of the bronchus. The patient when admitted three months before death with two months' history of illness had the physical signs of consolidation of left upper lobe, but the increase of breath sounds, etc., seemed to preclude closure of the bronchus at that time. The plug of débris was not hard and was fairly easy to detach from the walls of the bronchus.

## 11. TWO CASES OF HONEYCOMB LUNG.

E. W.—, male, *set.* 1. Admitted October 10th; died November 15th. The child had had measles, followed by broncho-pneumonia, two months before admission and had been getting steadily worse since then. There was no evidence of syphilis either in personal or family history. On examina-



tion the child looked pale and ill, the pulse was 120, resp. 40, and temp. 99°. The chest was of good shape and the movement not bad. On percussion there was dullness over lower lobe of right lung but resonance elsewhere. Over the dull area a few crepitant sounds were audible, elsewhere there were rhonchi. An exploratory needle was put into right chest, but no fluid was found. A little sputum was obtained and found to consist of muco-pus. No tubercle bacilli present. Crepitant sounds and areas of impaired resonance appeared on the left side, and the child died 36 days after admission, the illness having lasted just over 3 months, dating from the attack of measles.

*Post-mortem.*—On exposing the thoracic contents firm pleural adhesions were found, especially marked at both bases, and involving interlobar fissures. On section the whole of both lungs, and especially the lower lobe, were riddled with small cavities. None, however, presented on the pleural surface. Microscopically they were related to the bronchial tubes. The case is of interest owing to the shortness of the history, the child being not thirteen months old at death, and apparently healthy when attacked by measles.

R. M—, male, æt. 45. Admitted May 29th; died June 13th. At the age of 19 patient had an attack of pleurisy, and since then has had several similar, though milder attacks and a cough every winter. When 25 his winter cough was very bad, lasted three months, and was accompanied by night sweats and several small hæmoptyses. He had been at regular work till two days before admission when he had a violent fit of coughing, followed by very severe pain in the chest. On examination temperature was 102°, resp. 30. The left side of the chest moved badly. On percussion there was resonance on right side, and it extended for an inch and a half to the left of the sternum. Over the rest of the left side the note was impaired. The heart's apex beat was felt three quarters of an inch outside the nipple line on the left side. There were no adventitious sounds, but over the dull area breath sounds, voice sounds, and fremitus were all impaired. In the course of a week the percussion note on the left side became more resonant, and the position of the apex beat came in; the general condition, however, was not improving, the temperature keeping between 103° and 104°, and the pulse averaging 120. An exploratory needle was inserted at the angle of the left scapula, and on going deep about a drachm of pus was obtained. Patient died on the 14th day after admission. There was a good deal of sputum, mainly muco-pus, and no tubercle bacilli were found on two examinations.

*Post-mortem.*—The body was rather emaciated. Examination of the thoracic viscera showed the pleuræ to be obliterated, though the adhesions were not very firm. The left lung was both bulky and solid, weighing 44 oz. On section it presented a honeycomb appearance, being riddled with small cavities, which turned out to be transverse sections of small bronchi. The walls of the bronchi and cavities were not thickened. They were smooth, and are described as "in colour and appearance resembling veins rather than bronchi." The cavities were separated by solid broncho-pne-

monic areas. The lung was rotten and the cavities filled with pus; the exploratory trocar had entered one of these cavities. There was no naked eye evidence of tuberculosis, either recent or old. There was disseminated broncho-pneumonia of the other lung.

## 12. A CASE OF CARCINOMA AND SIGMOID AND DUODENOCOLIC FISTULA.

A. G—, æt. 36. Admitted May 18th; died June 11th. Doubtful family history of tuberculosis, and personal history of an attack of pleurisy 19 years previously. He had also had syphilis 15 years, and jaundice 4 years, before. The patient was in good health and regular work until the last 2 years, when he began to suffer from intermittent pain in the lower half of the abdomen and back. This went on without other symptoms until the last two months, when diarrhœa began, and continued up to admission. He never noticed that he passed blood *per rectum*, and the opening of the bowel was not accompanied by pain. He had lost over 3 stone in the last 12 months, representing nearly 39 per cent. of his bodily weight. On examination he was found to be pale and much emaciated. The abdomen was somewhat distended, resonant all over, and not very tender. It was a trifle rigid, and nothing was made out on palpation. Nothing abnormal was found in the chest. While in hospital the patient took his food fairly, but the diarrhœa continued. He gained 5 lbs. in weight between the 18th and the 26th May. The condition being rather suggestive of tubercle of the bowel, the fæces were twice examined for tubercle bacilli, but none were found. Intractable vomiting developed, and the patient died on June 11th.

*Post-mortem.*—The body was much emaciated, the abdomen sunk and retracted. On opening a growth was found situated at the commencement of the pelvic colon and adherent to the third part of the duodenum, which was invaded by it. On further examination a duodeno-colic fistula was made out admitting 1st finger. The jejunum and ileum were contracted and practically empty. The ascending transverse and descending colons were also small. There were no metastases. There were adhesions over the upper lobe of the left lung, which was the site of obsolete tubercle. Microscopically the growth was a columnar-celled carcinoma with much mucoid change.

## 13. A CASE OF TUBERCULOUS DISEASE OF THE CÆCUM.

J. A. H—, æt. 28, female. The health in childhood was good. The first illness experienced was pain in the right side, said to have been accompanied by hæmaturia, and diagnosed as renal calculus. Later on she had tuberculous glands removed from the groin (dates not available). After this she kept well until the last 4 years, when she began to find difficulty in swallowing solid food. She places the obstruction at the level of the

upper border of the sternum. Later she began to have pain in the epigastrium after food, and for the last three years suffered from a gnawing pain and tenderness in the right side. She came to this Hospital in March, 1905, and an exploratory *coeliotomy* was performed, the appendix being removed. This, on microscopical examination, turned out to be tuberculous. At the operation it was noticed that the *cæcum* was much thickened. The symptoms not being relieved, a second operation was performed, and the *cæcum* resected. The walls were thickened, and it was also the site of tuberculous ulceration. The ileum was anastomosed to the hepatic flexure of the colon, and the patient left hospital feeling well and able to take her food without any trouble in swallowing. After a fortnight the difficulty in swallowing returned; there was also vomiting & regurgitation. She was admitted to a cottage hospital and treated by rectal feeding, but the symptoms returned as soon as she tried to take food by the mouth. She was readmitted to this Hospital on June 29th. She was then by no means ill-nourished. There was at first obstinate constipation and much pain and tenderness just below the right costal margin. These symptoms were relieved as the bowels became regular, and she left hospital on August 31st in good general health, having gained over 1 stone in weight. She was readmitted on the Surgical side later in the year with a return of pain under right costal margin. The abdomen was once more explored, and adhesions found between the stomach and liver. These were separated, and since then she has been comfortable.

#### 14. A CASE OF SUPPRESSION OF URINE.

G. M—, *æt.* 11, male. Admitted December 9th; discharged January 14th. On the morning of December 8th the boy was sent home from school with pain in the lower part of the abdomen and lumbar region referred mainly to left side. He said he had had a similar milder attack a month before, only on the right side. Since the onset of the pain he immediately vomited all food. On examination the abdomen was rather rigid and tender, especially over the left renal region and in left groin. An ill-defined tumour was thought to be present in the region of the left kidney, and there the percussion note was slightly impaired. The pulse was 84, and the temperature 100°. The patient was said to have passed water on the morning of the 9th, but when he had passed none in the 24 hours after admission a catheter was inserted, but no urine was drawn off. On December 11th, there being still apparently no secretion of urine, an exploratory *coeliotomy* was performed. The left kidney was found to be rather large and hard; the pelvis was opened and a probe passed, but no obstruction was found. The abdomen was closed and patient put back to bed, still secreting no urine. This condition persisted throughout December 12th until the night of December 13th, when 7½ ozs. were passed. Apart from a slight trace of albumen specimen was normal. After this secretion of urine became regular, and patient made an uninterrupted recovery, having had complete suppression for 4½ days for no obvious reason.

## 15. A CASE OF TUBERCULOUS MENINGITIS IN AN ADULT SUGGESTING ENTERIC FEVER.

A. M—, æt. 21. Admitted June 2nd; died June 12th. Patient had always enjoyed good health. His illness began on May 24th, when, on getting up, he felt giddy, and had to return to bed. He remained in bed until admission with a severe headache and constipation. There was also a slight cough, but no vomiting. On examination he was apathetic, with a temperature of 102° and a pulse of 90. The tongue was dry and furred, and there was sordes on teeth and lips. Nothing abnormal was made out in the chest or abdomen, and the spleen was not palpable. On the back there were several raised papules, fading on pressure. Also numerous smaller papules which did not fade. Neither seemed to be of a distinctive character. The hands were tremulous; there was no *tâche cérébrale*. There was a trace of albumen in the urine. On the day after admission some of the spots on the back had disappeared, but others had taken their place. A negative Widal reaction was obtained, and on June 7th this reaction was again negative. The fundi were examined and found normal; there were no physical signs in the chest, and the reflexes were normal. The rose spots on the back in many cases developed into small pustules, and there was a good deal of delirium. The temperature chart suggested pneumonia rather than typhoid, keeping steadily just above 103° without remissions. On June 12th the patient became rather cyanosed, and began to breathe at 44 per minute. The lungs were full of rhonchi, and there was an impaired note at right base, over which area the breath sounds had a tubular character. The patient died on June 12th, 22 days after onset.

*Post-mortem.*—The trachea and bronchi were deeply injected, and had a crimson velvety appearance. A caseous gland lay at the bifurcation of the trachea. There were a few pleural adhesions, but they were not apical. The lungs were bulky, and on section their hæmorrhagic condition was most noticeable. The hæmorrhages were not diffuse, but occurred in patches about the organs, the largest about  $\frac{3}{4}$  inch in diameter. On the visceral pleura between the lobes were some small aggregates of tubercles; similar tubercles were seen in some of the hæmorrhagic areas in the left lower lobe. Here, too, was a sharply circumscribed soft white mass, which looked, at first sight, like a new growth. The hæmorrhagic condition of the lung led to a suggestion of glanders, but there was no other indication of this disease. Both large and small intestines were found perfectly healthy and free from ulcers. The mesenteric glands were unaffected; the spleen was small and soft. On removing the skull cap the dura appeared healthy, and, on removing the brain, extensive basic lepto-meningitis was discovered, the arachnoid being whitish and opaque with effusion beneath. The lips of the Sylvian fissures were glued down, and, when separated, a few miliary tubercles were recognised. Beneath the cerebellum, just above the corpora quadrigemina, the membranes were more thickened than elsewhere, and on

section this thickening proved to be of the nature of tough caseous material. The cerebral ventricles contained some excess of fluid.

*Microscopical report on the lung.*—There are some caseating tubercles. Some of the white areas consist of lung tissue invaded by leucocytes resembling patches of grey hepatisation. The greater part of the lung shows intense congestion, with œdema and hæmorrhages into the alveoli. A few streptococci are seen, and numerous large bacilli bearing a close resemblance to bacillus anthracis. No tubercle bacilli were detected.

#### 16. A CASE OF CYANOSIS OF OBSCURE CAUSATION.

E. H—, æt. 28. Admitted October 20th; discharged January 31st. Patient is one of 16 children, 10 of whom died in infancy. In childhood she had scarlet fever and rheumatism. Four years ago she was in another hospital for anæmia, and during this time there were attacks of dyspnœa. To these attacks she has been subject since. The present series began a month before admission. On admission she was markedly cyanosed, sitting up in bed and breathing about 50 per minute. The pulse was 84. Air entry was good, there was no demonstrable pulmonary or cardiac lesion, and no clubbing of fingers. The fundi were normal, and there was no evidence of intra-cranial affection. The blood was examined and was found normal, the red cells numbering just over 5 millions per c.mm., and the colour index was .75. The day after admission the patient began a series of remarkable attacks; while sitting up in bed breathing at 50 per minute and moderately cyanosed the rate of respirations would suddenly begin to increase in rapidity. They were counted up to 180 per minute, and then became uncountable. Then they ceased, and she lay back in bed for some time drawing about 2 deep inspirations per minute. The patient's appearance in these attacks is most alarming. She does not struggle, lies quite still, and the whole face becomes cadaveric in appearance. The degree of cyanosis is extraordinary—not only the lips, but the whole face matching the binding of the blue edition of Osler's 'Medicine.' The deep inspirations gradually pass off and a crowing expiration takes their place. Throughout the attack the pulse remains perfectly regular and between 80 and 90 per minute. A very large number of attacks similar to the above occurred. They could frequently be aborted by hypodermic injections of either atropine, morphia, strychnine, or water. The patient was put on Weir Mitchell treatment, gained 1½ stone, and when discharged had had no attack for 4 weeks.

#### 17. A CASE OF CEREBELLAR HÆMORRHAGE.

J. R—, æt. 44, male. Admitted December 28th; died January 2nd. The patient was admitted for chronic nephritis, and complained of headache, diarrhœa, and vomiting. There was retinitis, left-sided cardiac hypertrophy, and arterio-sclerosis. The urine was of specific gravity 1010, and contained ½ albumen. No blood or casts made out. Two days after admission the

patient, when in bed at 7 o'clock in the morning, suddenly complained of severe pain in the head, and began to retch. In a few minutes he became unconscious; he was promptly examined, and the following condition obtained:—The pupils reacted to light, the right was larger than the left, being mediumly dilated, while the left was normal. There was no conjugate deviation. At first there was no weakness of the face, but this soon developed, the left side being definitely affected within an hour and a half. At this time the right arm and leg felt more helpless than the left. All the deep reflexes were increased, and ankle clonus and Babinski's sign were present on both sides. Four hours after onset the paralysis of left side of face and of right arm and leg were well marked. Triceps and knee-jerks had now disappeared on the affected side as had the clonus on both sides. On the left side the knee-jerk was still brisk and Babinski's sign very marked. On the right side Babinski's sign was present, but the response was feeble. Death occurred 4 hours later.

*Post-mortem.*—On removing the brain a little recent clot was seen on both the upper and lower surfaces of the cerebellum. The arteries of the circle of Willis were thickened. A small quantity of blood-stained fluid was present in the lateral and 3rd and 4th ventricles. On making sections no affection of the cerebrum was found. The right lateral lobe of the cerebellum was occupied by recent blood-clot extending across the central lobe into the left lateral lobe, the whole hæmorrhage occupied about the same space as a pigeon's egg. The kidneys were small, and of the contracting white type.

#### 18. A CASE OF CEREBRAL HÆMORRHAGE IN A CHILD THREE YEARS OF AGE.

R. J. R.—, *æt.* 3, male. Admitted December 11th; died December 13th. The child had had measles and whooping-cough; there was also a history of "snuffles" and convulsions in infancy. He had suffered from discharge from both ears, and frequently complained of earache. Two weeks before admission the ear discharge stopped on both sides, and swellings appeared accompanied by pain. The day before admission, while at play, he suddenly complained of giddiness, screamed, and went off into a "fit." "Consciousness was lost, the eyes were closed, the head retracted, and the back arched; the limbs moved a little." No incontinence of urine or fæces noticed. Four of these attacks occurred, and then the child was brought up to this Hospital. When examined he lay in bed with knees drawn up and head retracted. The eyes were kept closed, and there was marked intolerance of light. Neither strabismus nor nystagmus were made out. The pupils were equal and dilated; there was no change in the fundi, and no tubercles were seen. The knee-jerks were brisk, and the plantar reflex was flexor in type. No evidence of mastoiditis; there was discharge from the ears, and swelling of glands of neck. Temperature was 101.5°, falling rapidly to normal. No specimen of urine. Lumbar puncture was performed; cultures made from the fluid were sterile. Death day after admission.

*Post-mortem.*—The vessels at the base of the brain were healthy, and no trace of embolism was made out. The middle cerebrals were traced to the point of breaking up on the insulæ. The pia-arachnoid covering lower part of the left parietal lobe and the adjacent part of the temporal lobe was infiltrated with blood-clot over an area the size of half a crown. The subjacent brain substance was diffuent, and softening extended upwards as far as basal ganglia. The ventricles were flooded. The cerebellum and pons were healthy; there was no mastoiditis. The heart and other organs were healthy. The blood-clot was examined microscopically, and no evidence of new growth found.

19. CEREBRAL TUMOUR SIMULATING CEREBRAL THROMBOSIS, MICROSCOPICALLY CHORION EPITHELIOMA TYPE, IN A MAN.

T. B—, æt. 69, male. Admitted August 3rd, died August 24th. "Always irritable, and more so lately." Recently has been slower both in movement and in speech. Eight days before admission he returned from work seeming unusually dull and tired. It turned out that during the day he had behaved queerly at his office, *e.g.* giving the safe key to a perfect stranger. His behaviour made such an impression that one in charge inquired whether he had gone off his head. He took to his bed on his return home, either would answer no question or had lost power of speech, and occasionally "laughed foolishly." On the following day his face was one sided, and he appeared to have lost power in the arm and wrist. (History given by relatives who are described as unintelligent.) On examination he was seen to lie on his back with eyes half closed, taking no notice of his surroundings. There was possibly some right-sided facial weakness, but it was rather more suggestive of a general inertia. The movements were good as far as could be tested. There was no strabismus, the pupils were equal and reacted to light, possibly also to accommodation. The right arm was flaccid, and lay in any supported position in which it might be placed. In the left arm there was some power of movement. The right leg could move slightly, but not against resistance. The knee-jerk was present though feeble, and no plantar reflex was obtained. The condition of the left leg appeared to be normal. Speech was limited to the words yes and no uttered with difficulty. The heart showed left-sided hypertrophy, and a systolic murmur was audible at the apex. The arteries were thick and the pulse of high tension. The lungs were resonant all over. The patient became more difficult to rouse, and there was complete incontinence of urine and fæces. There was no albumen in the urine. The condition showed no change until the 23rd August, when a non-fluctuating swelling appeared on the right side of the face in a position corresponding to the parotid gland. Death on August 24th.

*Post-mortem.*—On removal of the skull cap there was seen to be some general engorgement of the meninges, and a reddish tumour presented on the right side over the insula. Externally it involved the opercula, and

extended in a forward direction for  $\frac{3}{4}$  of an inch, involving the middle and inferior frontal convolution; posteriorly it reached within  $\frac{1}{8}$ th of an inch of the fissure of Rolando coming nearest at the superior genu. In a vertical direction the superficial extent was about 1 inch. Below it pressed on the anterior portion of the temporal lobe. On section it was seen to extend inwards for a considerable depth involving the grey matter of the insula, and was surrounded for about  $\frac{1}{2}$  an inch on all sides by well-marked red softening. It was not encapsuled, so above measurements and relations being naked eye are of course only approximate. Elsewhere the brain was normal in appearance.

The greater part of the upper lobe of the right lung (weight 48 oz.) was occupied by a solid mass of growth of the same appearance as that of the brain. It appeared to have actually invaded the lung, and not merely pushed that organ in front of it.

The whole of the left lobe of the liver was occupied by a mass of growth, and there were also several fair-sized deposits in the right lobe. The large growth of the left lobe looked rather as if it had grown in from the hylus. Weight of liver 87 oz.

The spleen was almost entirely occupied by a mass of growth, which also looked as if it had grown in from the hylus. Weight of spleen 10 oz.

There was a small nodule in the right kidney, and the right supra-renal was invaded by growth.

The right parotid gland was invaded by growth.

The testicles were not examined. No obvious external affection.

Microscopically all deposits were a chorion epithelioma type of tumour, and it was impossible to trace primary growth.

## 20. A TUMOUR? INVOLVING SELLA TURCICA.

A. D—, æt. 43, male. Admitted November 13th, died December 31st. There was a history of syphilis, health otherwise being good. Patient came up to Hospital with a six weeks' history, commencing with frontal headache, which had been continuous, but unaccompanied by vomiting. For the last four weeks there had been very severe left-sided "spasmodic tic." On examination the pupils reacted to light and accommodation, the left perhaps rather more sluggishly than the right. There was also affection of third, fourth, and sixth nerves on the left side, manifested by paresis of internal and external recti and superior oblique. There was also ptosis. The visual fields were unaffected, there was diplopia on looking downwards, and no optic neuritis. There was some hyperæsthesia over left anterior half of scalp and supra-orbital region. No other affection of cranial nerves made out. There was a tendency both to fall and to walk to the right. The deep reflexes were present and normal. The plantar reflex was flexor in type; no clonus was elicited. There was no wasting or loss of power in arms or legs. The frontal sinuses were examined, and nothing abnormal made out. There was no change in the urine, and nothing else of note. By November 23rd the gait was definitely ataxic, the mental



condition became very bad, and there was some pyrexia. Lumbar puncture was performed, and a little fluid obtained, which was sterile. On December 14th there was right ptosis, and right ophthalmoplegia soon followed. Double ophthalmoplegia shortly became complete; there was incontinence of urine and fæces, considerable loss of power in arms and hands, and a fine tremor in the latter. Death occurred on December 31st.

*Post-mortem.*—The brain was removed, examined, and found perfectly normal except, perhaps, the lateral ventricles were more capacious than usual. Examination of the base of the skull revealed the fact that the sella turcica was much expanded, and contained a globular tumour. This tumour had stretched the diaphragma sellæ over it, and viewed from above had a diameter of  $\frac{3}{4}$  of an inch. Its summit was the stalk of the pituitary body. The dorsum sellæ had disappeared, but the dural covering was intact. Stretched over the tumour above lay the optic chiasma and 3rd nerve, and stretched over it laterally lay the 6th nerves. The margin of the tumour approached the cava Meckellii, and no doubt exerted pressure on the Gasserian ganglions, especially on the left side. There was disseminated broncho-pneumonia of both lungs and mediastinitis. There was no sign of acromegaly.

*Microscopical report.*—Although to the naked eye the mass appeared like a neoplasm, microscopically nothing but normal bone could be made out. Many sections were cut from portions selected by Mr. Shattock as being most typically neoplastic, and many films of marrow were examined, but both were quite normal; the marrow had not the character of a myelomatous condition. There appeared to be no doubt of bone affection at the autopsy; the pituitary body had disappeared, and in its neighbourhood the bones of the base of the skull were friable, and unusually red and moist. This very friability made unsuccessful an attempt to remove the tumour *en masse*.

## 21. TWO CASES OF HYDROCHLORIC ACID POISONING FOLLOWED BY PYLORIC STENOSIS.

(a) G. L—, æt. 41, male. Admitted July 26th; discharged September 20th. G. L—, swallowed hydrochloric acid (amount not stated) in mistake for castor oil, and was admitted an hour and a quarter later. The lips, tongue, tonsils, palate, and uvula were swollen and covered with grey slough, and there was slight epigastric tenderness. The pulse was 80, and of good volume and tension. He was given the usual remedies, all of which he vomited, the last vomitus being alkaline. Rectal feeding was immediately commenced, and he became fairly comfortable. By August 3rd he was taking fish by the mouth, and on August 6th was on full diet. On August 9th he, for the first time, complained of pain low down in the abdomen. On August 12th he began to be sick. This sickness continued, and took on the character of dilated stomach vomiting. On August 22nd an œsophageal tube was passed and a pint and a half of residual fluid re-

moved. On the following day cœliotomy was performed, the stomach was found dilated, and the pylorus thickened; the stomach, apart from the pylorus, felt healthy as to its wall. A gastro-duodenostomy was performed, patient made a good recovery, and was discharged on September 20th in excellent health. It is worthy of note that the patient's chest was examined on the morning of the operation and found normal, within 8 hours of the operation there were typical physical signs of consolidation in the right axilla, and he had an ordinary mild pneumonia. The poison was taken on the 26th, after an interval of comfort pain was experienced 14 days later, symptoms of pyloric obstruction were present within 17 days, and operation became necessary within 28 days.

(b) F. H—, æt. 42, male. Admitted October 7th; died December 17th. At 12.30 a.m. on October 7th F. H— drank 5 oz. of spirits of salts in mistake for a purge. He discovered his error immediately and tried to make himself vomit. In a few minutes he felt a burning pain in the stomach and throat, and ultimately vomited. In the course of 6 hours he vomited several times, and passed some loose stools. He then saw a doctor who administered an emetic, and sent him up to this Hospital where he arrived 8½ hours after taking the poison. He was given magnesia which he vomited. The mouth and throat were injected, and there was tenderness in the epigastrium especially on the left side. Nothing else of note except a trace of albumen in the urine. A test meal was subsequently given, and no free hydrochloric acid found. He was put on rectal feeding, and gradually worked up to full diet by October 16th. Apart from a burning sensation in his throat he experienced no other discomfort. On October 20th he had 3 small hæmatemeses (about 3 oz.), and complained of great pain in his left hypochondrium. He was put back on rectal feeding and lost his pain. On October 24th there was melæna in the stools. In a few days he was given 2 raw eggs and milk by the mouth daily, and continued to feel fairly comfortable until November 10th when he was having mincemeat by the mouth. In the meantime he had only vomited once, and pain was very slight. On November 16th he again commenced vomiting, and now began to complain of a good deal of pain. On November 28th lavage of stomach was commenced, and this gave a good deal of relief. As the stomach was definitely dilated, and there was undoubtedly pyloric obstruction cœliotomy was performed on December 13th, when great dilatation of the stomach was observed and treated by the operation of anterior gastro-jejunostomy. The patient died three days later.

*Post-mortem.*—There was general peritonitis, and a stricture round pylorus only admitted a No. 8 catheter, there was no other indication of corrosive poisoning in the stomach. There was obsolete phthisis at both apices, and an adherent pericardium.

## 22. TWO CASES OF RECURRENCE OF MALIGNANT GROWTH SOME YEARS AFTER REMOVAL, AND AT A DISTANCE FROM SITE OF OPERATION.

### A. Recurrence in liver.

R. C—, male, æt. 55. Admitted July 19th, discharged August 30th. Ten years before admission patient's right eye was removed for a condition microscopically sarcomatous. He kept well until the last three months, when he first began to have pain in the upper part of the abdomen. He has lost two stone in weight, and there has been a good deal of vomiting. On examination the upper part of the abdomen was prominent, and a large hard mass could be felt descending on respiration. Free hydrochloric acid was present in test meals on two occasions. There was some vomiting and pain while in the Hospital, and he was discharged on the 30th August. He subsequently died in the infirmary, and at the autopsy the liver was found to be the site of a malignant growth.

### B. Recurrence in scar tissue.

M. W—, æt. 66, female. Admitted 27th February, died 12th April. The patient had had typhus fever at the age of 15 years, but was otherwise healthy till her marriage. After her first confinement she had an attack diagnosed as gall-stones. There was very severe pain in the right side, she was sick, sweated, and was jaundiced. She had similar attacks (8 in all) after each pregnancy. The left breast was removed nineteen years ago for cancer. No record of microscopical report. There were other attacks of biliary colic after the menopause, the last being 7 years before admission. In December, 1904, she for the first time had an attack of pain in the left side. This was different to her previous attacks, and compared by the patient to a labour pain. The condition persisted, and was accompanied by vomiting until admission. On examination the patient looked healthy, and nothing was made out but a localised spot of tenderness just below the left costal margin in the nipple line. There was obstinate constipation relieved by enemata, and the results showed considerable melæna, an adjunct which continued to accompany the opening of the bowel until death. Early in March visible peristalsis was observed in a region corresponding to pain and tenderness. An attempt was made at an exploratory celiotomy, but the patient took the anæsthetic badly, and it was not proceeded with. Obstinate vomiting developed and continued. Early in April a pint of bright red blood was passed per rectum. Patient continued to retch and vomit, and there was melæna to the last. Death occurred on April 12th.

*Post-mortem.*—The body was emaciated, and on opening the abdomen the intestines were seen to be small and contracted, but presented no naked-eye lesion other than a few petechial hæmorrhages. The liver was small, and at the site of the gall-bladder was a large contraction scar with the pylorus adherent immediately below it. No gall-bladder could be made out, simply a mass of adhesions involving both its site and the pylorus.

In the adhesions a hard mass could be felt. On separating the adhesions an apparent fistulous opening was found, and a probe could be passed down this into either the stomach or duodenum, but not down the bile-duct. It was of course impossible to say whether there had ever been an opening from the gall-bladder into the stomach, but it appeared probable. The cystic duct could be traced up into the adhesions, where it ended in scar tissue, its lower portion together with the hepatic and common duct was thick walled, dilated, and patent along the whole length. The stomach was contracted down and had a double appearance, the pyloric end being much drawn out. On opening it appeared normal except at the pylorus, which was much stenosed, very hard, but not ulcerated. Bearing in mind the adhesions it was impossible to say whether there was malignant growth or not by the naked eye. No source for the intestinal hæmorrhage was found. The pancreas appeared normal, and was in no way involved in the adhesions around the gall-bladder and stomach. The other organs were small and wasted, but showed no evidence of disease. There were no metastases anywhere. Microscopically the hard mass in the scar tissue showed a columnar celled carcinoma with much mucoid change.

23. THE FOLLOWING CASES HAVE BEEN SELECTED TO ILLUSTRATE DIFFICULTIES WHICH ARISE IN THE DIAGNOSIS OF LESIONS IN THE NEIGHBOURHOOD OF THE DIAPHRAGM.

GROUP 1. *The Differential Diagnosis between Pneumonia and Liver Abscess in Patients with Enlarged Livers who have Lived in Subtropical Countries.*

No. 1.—*A liver abscess suggesting pneumonia.*—W. E—, æt. 35, ship's steward. The patient, in the course of his vocation, had spent much time in the tropics. There was no history of syphilis; he had had typhoid fever 10 months before admission. Having previously been in good health, he went to bed with a headache, and awoke with acute pain in the right side, followed by difficulty and pain on respiration. On admission the pulse was 112, temp. 103°, and resp. 46 to the minute, rapid, jerky, and shallow, and obviously accompanied by much pain. The *alæ nasi* were working, and there was occasional painful hiccough. On examination there was dullness over the right base, where air entry was poor, and crepitations, probably pleural, were heard just below the angle of the right scapula. The patient could not be induced to take a deep breath. Over the liver, which was palpable, there was considerable tenderness; the spleen could not be felt. In the course of the next four days the dullness over the right base increased and crepitations became more marked. The breath sounds, vocal fremitus, and vocal resonance were all much diminished over this area. The temperature varied between 100° and 102°. On the fourth day after admission the right lobe of the liver was observed to nearly reach the umbilicus, a considerable and rapid increase since admission. A swelling also appeared

in the epigastric region; this was aspirated, and 3 oz. of brown offensive pus was drawn off. The abscess was opened the same night, and found to lie in the abdominal muscle and communicate with a further cavity in the substance of the liver. The patient did not recover from the anæsthetic.

*Post-mortem.*—The liver was very large, and projected upwards into the cavity of the thorax. In addition to the abscess which had been opened at the operation a second abscess was found presenting on the upper surface of the right lobe and roofed by the diaphragm, which was much swollen and inflamed. There was a good deal of lymph over the lower lobe of the right lung, especially on the diaphragmatic surface; the lobe itself showed some collapse. There were recent ulcers of dysenteric type in the cæcum and large intestine.

No. 2.—*Pneumonia suggesting liver abscess.*—H. R., general labourer, æt. 28. The patient had been in the army, and served in India, where he acquired syphilis, and suffered from “intermittent fever” and dysentery. On the voyage home, when 5 days out from England, he had an attack of jaundice, which persisted to date of admission. On the night of his arrival in England he had an attack of “ague,”—his first experience of the kind. The ague and jaundice persisted, and he went to a military hospital, where he remained 5 weeks, being then discharged, the ague and jaundice still persisting. He went on military manoeuvres, and acquired a severe cough. On his return he again went to the military hospital, and stayed there 3 months, at the end of which time he was told he had inflammation of the liver, and was invalided out of the service; at that time his legs were swollen. Subsequently he was admitted to a London hospital, where his attacks of ague continued, and there his spleen was aspirated, but no information gained. All this occurred during 1903 and 1904. He was never really well, but able to do a little work till the day before admission here, when he had severe pain of sudden onset in the right side and accompanied by a cough. On examination his complexion was anæmic and pigmented, and there was a distinct icteric tinge. The temperature was 103°, pulse 112, and resp. 44, rapid, jerky, and shallow, and the *alæ nasi* were working. There was dulness over base of right lung and crepitations, probably pleural. The breath sounds were distant and tubular, and vocal fremitus and vocal resonance were diminished. The liver dulness extended up to the 4th right rib, and it could be felt 3 inches below the costal margin. It was tender, and the surface felt smooth and not very hard. The spleen was readily palpable. His condition did not alter during the next 4 days, the temperature ranging between 102° and 104°. On the 4th day he was taken to the theatre, and the 10th rib resected with a view to exploring both sides of the diaphragm. Some clear fluid was found in the pleural sac, the lung was solid, and a trocar was inserted without result. The liver was also explored, with similar non-success. Patient died a few hours after the operation.

*Post-mortem.*—The middle and lower lobes of the right lung were in a state of grey hepatisation, and the extreme base of the left lobe showed a condition partly pneumonic and partly collapse. At the root of the right lung was a large mass of scar tissue in which the bronchial glands were

mostly embedded. Prolongations of this scar tissue followed the bronchi into the lower lobe, but did not produce any compression. There was obsolete tubercle at both apices. The liver was greatly enlarged, weighing 101 ozs. Its surface presented a fair number of depressed cicatrices and a few yellow nodules of small size. In the middle of the right lobe was a mass fully 1 inch in diameter, evidently a gumma. The spleen was enlarged and semi-diffuent. There was no evidence of past dysentery in the intestines.

## GROUP 2. *Two cases of Subdiaphragmatic Suppuration.*

No. 1.—*A case of chronic non-perforated gastric ulcer and sub-diaphragmatic suppuration.*—J. W—, æt. 68, piermaster. Patient enjoyed good health; there was no history pointing to gastric ulcer. A week before admission he "ricked himself" when making a sudden effort. He experienced no inconvenience at the time, but as his bowels had not been opened he took a purge 3 days later with a trifling result. Five days later having had no further motion of the bowels he was sick and had severe abdominal pain. He was admitted complaining of this pain, and of only having had his bowels opened once during the past week, and of having been sick. The temperature was 97°, and the pulse 100. Nothing was made out on examination apart from tenderness of the abdomen on palpation. The patient was torpid, and his general condition suggested chronic uræmia, but there was no albuminuria. The eyes were examined, but it was impossible to get a good view of the fundus owing to some opacity in the vitreous. Patient's bowels were opened by oil enemata, and his condition was much improved. An area of dulness was made out at the base of the right lung with a corresponding friction rub. The mental condition did not improve, and the abdomen became distended in the upper part. The evening temperature rose to 100°, and varied between that and normal till the end. The mental condition became worse, and there was incontinence of urine and fæces. The abdominal distension disappeared before death, which took place 3 weeks after admission. Widal's reaction was negative, and an examination of the blood showed the leucocytes to number 8400, of which polynuclear neutrophile cells represented 75·5 per cent.

*Post-mortem.*—On opening the abdomen the stomach was seen to be adherent to the liver, and a little pus was found in the adhesions. The stomach was opened, and a circular chronic non-perforated ulcer was found, its base being formed by peritoneum. The kidneys weighed 11½ oz., the capsules were adherent, and the organs suggested a mixed nephritis. (Never any albuminuria during life, urea 250 grains per diem.) There was fibrinous pericarditis and a shaggy heart. Also considerable atheroma of the aorta.

No. 2.—*"An unknown disease."*—H. T—, æt. 43, postmaster. Said to have had Bright's disease, which was cured, 4 years before admission. Seven days before admission the patient began to suffer from headache, he felt unwell and saw a doctor who found his temperature to be 102·5°. He kept his bed, was much constipated, and for the last 2 days had vague abdominal pain. On examination the temperature was 104° and the pulse was 100

The liver edge was palpable 1 inch below the costal margin, and there were multiple lipomata in the abdominal wall. Nothing else of note made out. The urine showed traces of albumen and bile. The blood was examined and showed 14000 leucocytes per c.mm., of which polynuclear neutrophile cells represented 85 per cent. The liver dulness increased rapidly both upwards and downwards, and the percussion note became impaired at the base of the right lung behind. The right side was aspirated, and  $\frac{1}{2}$  pint of clear fluid drawn off. Five days later the right side again aspirated, and about the same quantity of clear fluid drawn off. In neither case did any change in patient's physical signs result. The 9th rib was then resected and a sac exposed, a trocar was inserted, and 14 oz. of yellow fluid drawn off. The sac was then incised, and the liver exposed; it was hard, nodular, and had some depressions on it. The sac was closed by omentum in front and bowel below. There was no bile or pus in the fluid removed, and no cytological examination could be made owing to contamination with blood. The patient went back to bed with a gauze drain in the operation wound. There was very little discharge, and it was not purulent. The condition did not improve, and dulness at the right base continued. Some days later he was again aspirated and a pint and a half of clear fluid drawn off. The amount of albumen in the urine was increasing. The area of dulness rather increased at the base of the right lung, some dulness appeared at the base of the left lung, and loud crepitations were audible all over the chest. The temperature had a wide excursion approximately from  $97^{\circ}$  to  $103^{\circ}$  daily. Incontinence of urine and fæces ensued, and he died 3 weeks after admission.

*Post-mortem.*—There were many pleural adhesions at the right base, especially on the diaphragmatic surface, and a few ounces of blood-stained fluid. The lower lobe of the right lung was congested and œdematous. The left pleural sac contained a pint of blood-stained fluid, and the lower lobe on that side was collapsed. In the left upper lobe was a calcified nodule, 1 inch in diameter, sharply delimited from the rest of the lung. The 9th rib had been resected, the opening draining the subdiaphragmatic space. In the neighbourhood of the gall-bladder was a dense mass of adhesion, and on separating these pus escaped from both above and below the liver. It was thick, green, and of a foul odour. It did not amount to more than 5 oz. The liver itself was large, weighing 75 oz., and on its surface were numerous sloughing areas green in colour. On section of the liver suppurating areas varying from  $\frac{1}{4}$  to  $2\frac{1}{2}$  inches in diameter were seen scattered through the substance. They were all green in colour, soft, and with a few blackish granules. The bile ducts and portal vein appeared normal. The whole length of the alimentary tract appeared normal. Mr. Shattock who saw the liver expressed the opinion that it was either actinomycosis or an unknown disease. Microscopically all the sections showed was an infective granulomatous condition, and no evidence of actinomycosis was found either histological or bacteriological.

GROUP 3. *Three Cases of Empyema suggesting Subdiaphragmatic Lesions.*

No. 1. *An interlobular empyema thought at operation to be a sub-diaphragmatic abscess.*—E. B—, æt. 68. Said to have had some "matter" removed from left side 4 years before admission; had never been really well since this illness, and recently had been losing weight rapidly, and had constant cough and expectoration. On examination the left side of the chest was sunken, and by mensuration was 2 inches smaller than the right. There was no scar suggesting a previous operation. A large area of impaired resonance was found on the left side just below the angle of the scapula; there was also gross clubbing of fingers. An X-ray examination was made, and a definite shadow found corresponding to dull area. The condition was regarded as an old empyema, and the 9th rib was resected. In the account of the operation the following occurs:—"Something like a growth was felt apparently pressing up from below the diaphragm; this on palpation perforated, and was found to be an abscess cavity." The patient at first improved, but a great deal of purulent expectoration persisted; broncho-pneumonia developed in the right lung, and death occurred 18 days after the operation.

*Post-mortem.*—The 9th rib had been resected, and the incision was found to be draining a large cavity between the upper and lower lobes of the left lung. The lower lobe was collapsed and pressed down in turn, depressing the diaphragm, which was quite 2 inches below the lower margin of the incision, and separated from it by a mass of adhesions. The upper lobe of the left lung was merely hypertrophied and congested, but the whole of the right was in a state of confluent septic broncho-pneumonia.

No. 2. *Empyema suggesting a perinephric abscess.*—T. D—, æt. 17. Patient had not been feeling well for 6 weeks, but kept at work till 14 days before admission, when the first definite symptoms occurred, to wit, pain in the left side; he now too had some cough and profuse expectoration. The history did not suggest the sudden onset of an attack of pneumonia. At this stage he came up to the Hospital stating that he had lost 2 stone in weight during the past month. On examination the pulse was 84, respirations 24, and the temp. 97.6°. The chest was poorly covered and moved badly, there was pain on the right side on deep inspiration, while there was dulness to percussion at left base accompanied by diminution of breath sounds, vocal resonance, and vocal fremitus, though all were definitely present. There was no displacement of heart's apex beat. Neither the liver nor spleen were palpable. The night of admission the temperature rose to 103°, and continued to run this course. The physical signs did not alter, but a good deal of pain began to be experienced on the left side. Three weeks after admission an exploratory needle was put into dull area at left base, between the angle of the scapula and the vertebral column, but nothing was found. Eight days later it was decided to explore the back, and a vertical incision was made along outer



border of erector spinae muscles, the lumbar fascia exposed and divided, but nothing abnormal found; the neighbourhood of the kidney was then explored through a second incision also unsuccessfully; however, on exploring outwards from this incision towards the diaphragm there was a copious discharge of pus, which had made its way downwards beneath the ligamentum arcuatum externum. The patient made a rapid convalescence, and was discharged 24 days later. (The blood had been examined, and showed the leucocytes to number 16,000 per cubic mm., the polynuclear neutrophils representing 85 per cent.)

No. 3.—*Empyema suggesting abscess in relation with bones of vertebral column.*—J. C., æt. 16, had always been in good health until 5 weeks before admission, when, while at work, he had acute pain of sudden onset on the left side of the abdomen. He went home, and was seen by a doctor, who told him that he had pleurisy. The pain gradually left him, but the temperature kept up, and he became weaker. At this stage he came up to St. Thomas's. On examination the pulse was 126, temp. 102°, and the resp. 32. The chest appeared to move well and equally on the two sides, but there was definite impairment of note over base of left lung behind, though breath sounds, vocal resonance, and vocal fremitus were all transmitted. There was tenderness and rigidity of spines of dorsal vertebrae. The patient did not improve, the temperature continued to range up to 102° at night, and he was also losing weight. Twelve days after admission an oedematous swelling appeared over the last rib on the right side, the vertebrae in this neighbourhood being very tender. The next day the following report of an X-ray examination was returned:—"Both lungs are quite transparent down to the bases, so that there cannot be a collection of fluid in the pleural sacs. The patient cannot be got into a position in which an examination of the spine can be made." Next day the abscess pointing to the right of the spine was incised, no bony origin could be detected, and the probe passed across towards the left. Later two ribs were resected, and a left-sided empyema opened and drained. The collection of pus lay between the postero-internal aspect of the lung and the vertebral column, hence lung came up to the chest-wall everywhere. The patient made a good recovery, and was discharged.

GROUP 4. *A Case of Malignant Disease of Pleura suggesting Neoplasm of Kidney.*

E. H.—, æt. 2½ years, was admitted on May 12th with a history of constant cough, worse since Christmas, and general health worse for the last 3 days. She is described on examination as an unhealthy-looking child, the heart's apex beat was apparently behind the xiphisternum, and over the lower third of the thorax on the left side was a diffuse thickening, not connected with the skin, and having large superficial veins crossing over it; there was, however, neither redness nor pulsation. Over an area corresponding the side of the chest was absolutely dull, and breath sounds, etc., were absent. The liver was palpable an inch below the costal margin.

The patient was aspirated in this dull area, but only a little blood drawn off. In the left lumbar area, corresponding to region of kidney, a large hard swelling was made out, which rapidly increased in size, and dulness over it was continuous, with dulness over the thorax. This mass gradually pushed forward, and could be felt on palpation close under the abdominal wall; meanwhile, the heart's apex beat shifted to the 5th right interspace. The condition suggested a large and rapidly-growing kidney tumour, and death occurred 14 days after admission.

*Post-mortem*.—There was a great mass of new growth occupying the position of the left lung, and displacing the heart to the right of the mid-line. This growth involved the whole of the parietal layer of the left pleura. The lung was completely compressed in its centre, but did not appear to be actually invaded. The visceral pleura was adherent to the growth, but was easily detached. It had kept the general shape of the pleural cavity, and had invaded the chest-wall, intercostal spaces, and diaphragm, beneath which it appeared, depressing and shifting forward all the abdominal viscera. There was a nodule in the right supra-renal body, but no other metastases. Microscopically the growth was an endothelial carcinoma.

# SURGICAL REPORT.

1905.

---

By J. E. ADAMS, M.B., B.S.LOND., F.R.C.S.ENG.,

SURGICAL REGISTRAR.

---

THE present report has been compiled upon the same lines as that for 1904.

The number of surgical patients treated to a termination in 1905 is 166 less than the number so treated in 1904. This is accounted for by the fact that the number of injuries during 1905, treated in the wards, was 560, as compared with 720 in 1904; the death-rate in these latter cases was 7.85 per cent., or nearly 1 per cent. higher than the death-rate in the preceding year, which fact will go far to explain the slight increase in the total death-rate, which in 1905 was 6.49 per cent., and in 1904 6.45 per cent.; and also the mortality after operation, which in 1905 was 6.73 per cent., and in 1904 only 6.44 per cent., since a large proportion of these cases of injury were operated upon. The total number of operations for the year was nearly the same as that for 1904, namely 3625 in 1905, and 3627 in 1904.



*General Surgical Statement.*

Number of surgical beds . . . . . 273  
 (This includes all beds in children's wards and beds in small wards.)

Number of surgical patients in hospital, January 1st, 1905 { Males 149  
 Females 82

„ „ „ „ December 31st, 1905 { Males 153  
 Females 97

„ „ „ „ treated to a termination in 1905 . 3909

	Total.		Males.		Females.
Discharged . . . . .	3655	...	2272	...	1383
Died . . . . .	254	...	159	...	95
Totals . . . . .	3909		2431		1478

Death rate = 6.49 per cent.

(Ophthalmic cases are not included in the above statement.)

TABLE I.—*Abstract, showing Diseases, etc., in Classes,*

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.					
<b>GENERAL DISEASES.</b>																					
Erysipelas . . . . .	59	2	2	...	2	1	3	...	6	4	...	4	5	...	5	5	...				
Pyæmia . . . . .	7	...	...	...	...	...	1	...	2	1	1	...	1	1	...	...	...				
Tetanus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...				
Actinomycosis . . . . .		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Septicæmia . . . . .	2	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...				
Syphilis, primary . . . . .	3	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...				
„ secondary . . . . .	2	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...				
„ tertiary . . . . .	15	...	...	...	...	...	...	...	...	...	...	1	5	...	6	1	...				
„ congenital . . . . .	4	...	1	...	...	...	...	...	2	1	...	...	...	...	...	...	...				
<b>LOCAL DISEASES.</b>																					
<i>Carcinoma, spheroidal-celled—</i>																					
Breast . . . . .	50	...	...	...	...	...	...	...	...	...	...	3	...	...	4	...	...				
„ recurrent locally . . . . .	7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
„ „ „ and in supra-clavicular glands . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...				
„ „ in axillary glands . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
„ „ in supra-clavicular glands . . . . .	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
„ „ in spine . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Cervical glands . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Testis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Prostate . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				
Pylorus . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1				
<i>Carcinoma, columnar-celled—</i>																					
Stomach . . . . .	9	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1				
Pylorus . . . . .	4	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...				
Jejunum . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...				

according to Authorised Nomenclature.

40—			50—			60—			Result.				Remarks.		
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
M.	F.		M.	F.		M.	F.		M.	F.				M.	F.
5	4	1	...	4	...	1	...	3	1	...	130	24	2	3	Readmission 3. See also Special Table II.
...	...	...	...	...	...	...	...	...	...	...	...	2	3	2	Readmission 1; chronic 1; <i>Bacillus pyocyaneus</i> pyæmia 1; wound of thumb 1; periarticular abscess of ankle 1; puerperal 1; wound of finger 1; acute periostitis of femur 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	One case under appendicitis; actinomycotic invasion of liver found after P.M. See Special Abstract.
...	...	...	...	...	1	...	...	...	1	...	1	...	1	...	Non-fatal case infected through sore on heel; pure culture of <i>Staphylococcus albus</i> from blood; transferred to Medical side. See "Infective endocarditis." Fatal case: cellulitis of leg.
...	...	...	...	...	...	1	...	...	3	...	...	...	...	...	Secondary eruption 1; <i>Spirochæta pallida</i> present in 1; interstitial keratitis in 1. See Special Abstract. Circumcision 2.
1	...	...	...	...	...	...	...	...	2	...	...	...	...	...	Readmission 3.
...	...	...	...	...	...	...	...	...	9	6	...	...	...	...	
...	...	2	...	...	...	...	...	...	2	2	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
15	...	1	...	12	...	...	15	...	...	49	...	1	...	1	Readmission 1; inoperable 4; oöphorectomy 1; metastasis in spine 1; two separate nodules 1; atrophic 1; encephaloid 4; soft fibroma of arm 1. Fatal: erysipelas following operation.
3	...	...	3	...	...	1	...	...	7	...	...	...	...	...	Readmission 2 (same case); inoperable 1.
...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	Inoperable.
...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	Complete operation five years before.
3	...	...	1	...	...	...	...	...	4	...	...	...	...	...	Readmission 1; 1 case independent squamous-celled carcinoma of axillary scar.
1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	No local recurrence. Breast removed 1 year before; deposit in twelfth dorsal vertebra.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	No primary growth found. Glands of both anterior and posterior triangles involved.
1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
...	...	...	...	...	...	1	...	1	1	...	1	...	1	...	Partial enucleation 1; supra-pubic prostatectomy 1.
...	...	...	...	...	...	1	...	1	...	2	...	...	...	...	Gastro-jejunoscopy 1.
2	...	1	2	...	...	1	...	1	6	...	2	1	...	1	Readmission 1; gastro-jejunoscopy 5. One case transferred to Medical side, where death occurred.
...	...	1	1	...	...	...	...	...	2	2	...	...	...	...	Gastro-jejunoscopy in all; pylorotomy 1; appendix abscess 1.
...	...	1	...	...	...	...	...	...	1	...	...	...	...	...	Lateral anastomosis.

TABLE I.—*Abstract, showing Diseases, etc., in Classes,*

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
LOCAL DISEASES—continued.																					
<i>Carcinoma, columnar-celled—cont.</i>																					
Appendix and ileum . . . . .	1	1																			
Cæcum . . . . .	2	2																			
Splenic flexure of colon . . . . .	1	1														1					
Descending colon . . . . .	2	2														1					
Pelvic colon . . . . .	5	5															1				
Rectum . . . . .	35	35														2	1				
„ recurrent locally . . . . .	1	1															1				
„ „ in liver and omentum . . . . .	1	1																			
Liver . . . . .	2	2														1					
Gall-bladder . . . . .	1	1																			
Pancreas . . . . .	1	1																			
Cervix uteri . . . . .	1	1																			
Ovary . . . . .	3	3															1				
Omentum . . . . .	1	1																			
Skin and spine . . . . .	1	1															1				
Carcinoma of thyroid . . . . .	4	4															3				
<i>Carcinoma, squamous-celled—</i>																					
Lip . . . . .	5	5														2					
„ recurrent locally . . . . .	2	2														1					
„ „ „ and in glands . . . . .	1	1																			
Tongue . . . . .	15	15																			
„ recurrent locally and in glands . . . . .	1	1																			
„ „ in glands . . . . .	3	3																			
Floor of mouth . . . . .	7	7																			



according to *Authorised Nomenclature*—continued.

40—			50—			60—			Result.				Remarks.
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
M.	F.		M.	F.		M.	F.		M.	F.		M.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
				1						1		Previous operation for irreducible ventral hernia with necrotic omentum. Multiple carcinomatous strictures in ileum and 8 in appendix.	
										2		Lateral anastomosis 2; ileo-transverse-colostomy 1; ileo-iliac-colostomy 1.	
										1		Obstruction—transverse colostomy with subsequent resection and axial anastomosis.	
										2		Chronic obstruction 1. Colostomy with subsequent resection and anastomosis by lateral implantation 1. Lateral anastomosis 1.	
			1		2		1		1	1	3	Obstruction 5. Perforated caecal ulcer and general peritonitis 1. Carcinoma of ovary 1, removal. Caecostomy 1; colostomy 4.	
		1	6	3	2	10	3		20	12	3	Readmission 3, 2 with doubtful local recurrence after excision. Obstruction 2; colostomy 19; excision 4; erysipelas 2. See Special Table II. Supra-pubic cystostomy 1, after colostomy for inoperable rectal growth. Fatal: erysipelas 1; general peritonitis 1; no P.M. in one case.	
										1		Excision 6 months before; colostomy.	
			1							2		Excision in September, 1903.	
			1							1		Cholecystectomy with partial hepatectomy. No growth in liver.	
										1		Cholecystenterostomy.	
			1							1		Inoperable.	
		1					1		2	1		Removal 2; ?secondary to intestinal growth (previous pylorotomy) 1. Fatal: obstruction by pressure.	
			1							1		Previous gastro-jejunostomy for supposed carcinoma of pylorus.	
										1		? Primary growth in stomach.	
		1							1	3		All encapsuled and all enucleated. Clinically "adenoma."	
			2			1			5			Lower lip in all.	
			1						2			Readmission 1; neurectomy of third division of fifth nerve 1.	
										1		Inoperable.	
		6		1		5			14	1		Excision 8. Fatal: septic broncho-pneumonia. Floor of mouth involved in 2 cases.	
		1							1			Readmission.	
		1				1			3			Recurrence excised 1.	
		3				3		1	6	1		Inoperable 1. Fatal: gangrenous broncho-pneumonia.	

TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
LOCAL DISEASES—continued.																					
<i>Carcinoma, squamous-celled—cont.</i>																					
Floor of mouth recurrent locally	1																				
Pharynx . . . . .	6																		1		
Larynx . . . . .	5																				
Laryngo-pharyngeal carcinoma	2																				
Esophagus . . . . .	11																				
Antrum and superior maxilla	4																				
„ „ local recurrence	2																				
Pinna . . . . .	1																				
„ recurrent in glands	2																				
Face . . . . .	2																				
Forehead, local recurrence	1																				
Thigh . . . . .	1																		1		
Sole of foot . . . . .	1																				
Bladder . . . . .	3																				
Penis . . . . .	2																				
Ovary . . . . .	1																				
Vulva . . . . .	1																				
Buttock and perineum . . . . .	1																				
Inguinal glands . . . . .	1																				
Sinus, supra-pubic . . . . .	1																		1		
Rodent ulcer . . . . .	4																				
<i>Sarcoma—</i>																					
Of soft parts—																					
Skin over breast . . . . .	2									1				1							
„ of chest . . . . .	1													1							
„ of arm . . . . .	1																				
„ of leg . . . . .	1																				
„ of face . . . . .	2					1								1							
Inguinal glands . . . . .	1																				
Cervical glands . . . . .	2													1					1		
Pylorus . . . . .	1																				



TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—		5—		10—		20—		30—			
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.
LOCAL DISEASES—continued.													
Sarcoma—continued.													
Of soft parts—continued.													
Parotid . . . . .	1	1											
Mons veneris . . . . .	1	1										1	
Epididymis and testis . . . . .	3	3					1						
Skin of loin . . . . .	1	1											
Diffuse sarcomatosis of skin . . . . .	1	1											1
Erector spinæ . . . . .	1	1								1			
Recurrent locally—													
Skin of cheek . . . . .	1	1											
„ of leg . . . . .	2	2					1						
Thigh . . . . .	1	1											
Brachial plexus . . . . .	1	1											1
Recurrence in abdominal viscera . . . . .	1	1						1					
Of bone—													
Basis cranii . . . . .	1	1					1						
Mandible . . . . .	2	2					1			1			
Os innominatum and rib . . . . .	1	1											
Femur . . . . .	2	2								1		1	
Humerus, recurrent in deltoid . . . . .	1	1					1						
Endothelioma . . . . .	7	7										1	1
„ recurrent locally . . . . .	1	1											
Simple tumours—													
Lipoma . . . . .	23	23			1			1		1	1		2 5
Myxoma . . . . .	1	1											
Fibroma . . . . .	2	2			1							1	
Chondroma . . . . .	1	1											
Osteoma . . . . .	11	11			1			4	2		3	1	

ording to Authorised Nomenclature—continued.

40—			50—			60—			Result.			Remarks.
Dischd.	Died.	F.	Dischd.	Died.	F.	Dischd.	Died.	F.	Dischd.	Died.	F.	
								1			1	Inoperable.
											1	Alveolar melanotic. Erysipelas. P.M.—Multiple growths in skin and viscera.
									3			Readmission 1. Lympho-sarcoma 1; round-celled 1, readmitted; see Recurrent Sarcoma.
			1						1			Multiple.
										1		Round-celled. P.M.—Growths in kidney and pancreas.
									1			Spindle-celled. Interstitial keratitis.
1										1		Melanotic.
			1						1	1		Spindle-celled 1. Alveolar pigmented 1.
						1			1			
											1	Recurrent hæmorrhage after amputation of arm. P.M.—Secondaries in lungs and glands. Spindle-celled.
										1		Round-celled. Primary growth in testis, see above. Secondaries in liver, spleen, lungs, kidneys, and retro-peritoneal glands.
									1			Spindle-celled. Inoperable.
									1	1		Both giant-celled.
			1						1			Inoperable.
									1	1		Pathological fracture 1. Giant-celled 1.
									1			Round-celled.
1									5	2		Readmission for plastic operation 2. Eyelid 1. Erysipelas. Parotid 2. Submaxillary 2. See also under Appendix Abscess, Endothelioma of Appendix.
										1		Eyelid.
4			3	2			1		10	13		Scrotal 1, after radical cure of irreducible hernia. Hæm-angioma of leg 1. See also Appendicitis and Hæmorrhoids.
										1		Myxo-lipoma. Erysipelas and thrombosis.
										2		Recurrent epulis 1. External popliteal nerve 1. See also Carcinoma of Breast.
										1		Phalanx of hand.
									8	3		Readmission 1. Hallux 4. Femur 2. Scapula 1. Thigh 2. Humerus 1. Multiple 1. See also under Talipes various, Hammer Toe, Varicocele.

TABLE I.—*Abstract, showing Diseases, etc., in Class*

DISEASE.	Age.		0—		5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
LOCAL DISEASES—continued.																				
Simple tumours—continued.																				
Neuro-fibroma . . . . .	3														1				1	
Hæmangioma . . . . .	7	1	6																	
Adenoids . . . . .	33	1	1			9	2			6	6			2	5				1	
Papilloma . . . . .	9		2							2								1	1	
Adenoma . . . . .	11									1				6				2		
Granuloma . . . . .	6									1				2						
Cysts—																				
Dermoid . . . . .	5		1							1				3						
Sebaceous . . . . .	6													1				1		
Mucous . . . . .	1																			
Serous . . . . .	2									1				1						
Epididymis . . . . .	5																			
Antrum . . . . .	1													1						
Dental . . . . .	2													1						
Thyroglossal . . . . .	1		1																	
Bartholin's cyst . . . . .	2													1						
Hydatid . . . . .	2													1		1				
Ovarian . . . . .	7													2				2		
Ovarian teratoma . . . . .	1													1						
DIGESTIVE SYSTEM.																				
Simple stomatitis . . . . .	1																	1		
Ulcerative stomatitis . . . . .	2	1				1														

## According to Authorised Nomenclature—continued.

#	50—			60—			Result.			Remarks.
	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1								1	2	Amputation stump 1. Breast 1. ? Neuroma 1.
								1	6	Readmissions 3. See also Lipoma.
								18	15	Hypertrophied tonsils 19. Turbinal hypertrophy 2.
										Deflected septum 1. Infantile paralysis 1. See
										also under Dermoid Cysts, Papilloma of Larynx,
										Reducible Inguinal hernia (3), Nasal (2), Chronic
										Mastoid (2), Talipes Equino-varus, Caries of
										Lower Limb, Necrosis of Lower Limb, Tuber-
										culous Glands of Neck.
2	1							4	5	Readmission 1. Duct papilloma of breast 2.
										Larynx 4. Cheek 1. Nævo papilloma 1. Of
										Hallux 1. See also Fissure <i>in ano</i> and Adenoma
										of Thyroid.
			2					11		Breast 10. Supra-renal 1. Granuloma of breast 1
										(2 distinct tumours). Amputation of breast and
										clearance of axilla 2. See also Adenoma of
										Thyroid under "Thyroid."
1								2	4	Tuberculous 1. Syphilitic 1. Gum 1. Palate 1.
										Septum nasi 1. Cheek 1. Pubes 1. Beneath
										operation scar 1. See also Adenoma of Breast.
								3	2	Umbilicus 1. Episternal notch 1, inner canthus 1,
										submental 1, sublingual 1. Tonsils and adenoids
										1 case.
		1		2				4	2	Scalp 3. Buttock 1. Arm 1. See also under
										Fistula <i>in ano</i> .
				1				1		Nose.
								2		Breast 1, submental 1. See also under Simple
				2				5		Lymphadenitis.
								1		
								2		Readmission 1, recurrent. See also under Chronic
										Mastitis.
								1		
								2	1	Suppurating 1.
								1	1	Both of liver, subperitoneal. Fatal: aortic and
										mitral, with Raynaud's disease.
			1	2				6	1	Twisted pedicle 2. Multilocular 2. Intra-liga-
										mentous 2. Bilateral 2. Ruptured 1. Fatal:
										no peritonitis, shock.
								1		Twisted pedicle. Phthisis. Four months pregnant.
										Hæmorrhage from pedicle.
								1		
								2		Scraped 1.

TABLE I.—*Abstract, showing Diseases, etc., in Olad*

DISEASE.	Age.	0—		5—		10—		20—		30—	
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>											
Tonsillitis . . . . .	3	...	...	...	2	...	...	...	1	...	...
Parenchymatous glossitis . . . . .	1	...	...	...	...	...	1	...	...	...	...
Chronic superficial glossitis . . . . .	2	...	...	...	...	...	...	...	...	...	...
Simple ulcer of tongue . . . . .	1	...	...	...	...	...	...	...	...	...	...
Tuberculous ulceration of frenum linguae . . . . .	1	...	...	...	...	...	...	...	...	...	...
Salivary calculus . . . . .	1	...	...	...	...	...	...	...	...	...	1
Esophageal stricture . . . . .	4	...	...	...	...	...	...	...	...	...	...
Chronic gastric ulcer . . . . .	12	...	...	...	...	...	...	...	3	...	1 4 2
Perforated gastric ulcer . . . . .	10	...	...	...	...	...	2	...	4	1	2
Pyloric stenosis . . . . .	4	...	...	...	...	...	...	...	...	...	...
Chronic duodenal ulcer . . . . .	2	...	...	...	...	...	...	...	1	...	...
Perforated duodenal ulcer . . . . .	2	...	...	...	...	...	...	...	...	...	...
Gastroptosis . . . . .	1	...	...	...	...	...	...	...	...	...	...
Perigastric adhesions . . . . .	2	...	...	...	...	...	...	...	1	...	1
<b>Hernia—</b>											
Inguinal, reducible . . . . .	284	24	1	...	14	10	...	48	10	...	87 10 2... 48 2



According to Authorised Nomenclature—continued.

Age.	50—				60—				Result.				Remarks.
	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
...	...	...	...	...	...	...	...	...	2	1	...	...	All suppurative. ? Tuberculous 1.
...	...	...	...	...	...	...	...	...	1	...	...	...	Intra-buccal excision 1. Cauterised 1.
...	...	...	...	...	...	...	...	...	1	1	...	...	Excision of ulcer.
...	...	...	...	...	...	...	...	...	1	...	...	...	Phthisis. Excision of floor of mouth.
...	...	...	...	...	...	...	...	...	1	...	...	...	Wharton's duct. Displaced semilunar cartilage excised.
...	...	...	...	...	...	1	1	...	3	1	...	...	Spasmodic 1. ? Carcinoma 2. Treated with bougies 3.
...	...	...	...	...	...	...	...	...	5	4	...	3	Anterior gastro-jejunostomy 8; posterior gastro-jejunostomy 3; jejuno-jejunostomy 1. Fatal: all showed peritonitis, anastomoses sound; perigastric adhesions and perforation into lesser sac 1; vicious circle 1. For other cases see "Medical Report."
...	...	...	...	...	...	...	...	...	1	6	1	2	Subsequent anterior gastro-jejunostomy 1. Fatal: peritonitis. Phthisis 1. See also "Medical Report."
...	...	...	...	...	...	...	...	...	1	1	1	1	After hydrochloric acid poisoning 2. Finney's operation 1. Anterior gastro-jejunostomy 3. Fatal: peritonitis.
...	...	...	...	...	...	...	...	...	1	1	...	...	Anterior gastro-jejunostomy 1; posterior 1.
...	...	...	...	...	...	...	...	...	...	...	2	...	Peritonitis 1. Broncho-pneumonia 1.
...	...	...	...	...	...	...	...	...	1	...	...	...	Posterior gastro-jejunostomy. Phthisis.
...	...	...	...	...	...	...	...	...	1	1	...	...	Both readmissions; gastrolisis.
...	...	...	...	...	...	...	...	...	...	...	...	...	Readmissions 3. Right 135, left 106, double 43.
...	...	...	...	...	...	...	...	...	...	...	...	...	Direct 4. Congenital sac 21; funicular 8; infantile 2; interstitial 2; <i>en glissade</i> of sigmoid 1; appendix in sac 3 cases; undescended testis 16, 1 in supposed female (see Special Abstract); irreducible inguinal hernia 2; adenoids 3; varicocele 9; congenital phimosis 3; varicose veins 1; hydrocele of sac 2; funicular hydrocele 1; vaginal hydrocele 3, 1 recurrent; secondary syphilis 1; ischio-rectal abscess 1; scarlet fever 2 (see Special Abstract). See also under Appendicitis, Irreducible Inguinal Hernia, Ovarian Cysts, Reducible Femoral Hernia. Fatal: pulmonary thrombosis 2; epiploitis and peritonitis 1; phthisis and broncho-pneumonia 1; organs healthy 1.

TABLE I.—*Abstract, showing Diseases, etc., in Clas*

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>																						
<b>Hernia—continued.</b>																						
Inguinal, irreducible . . . . .	48	4	...	...	2	...	...	2	...	...	10	1	...	...	5	...	...	...	...	...		
„ recurrent . . . . .	10	...	...	...	...	...	...	1	...	...	5	...	...	...	3	...	...	...	...	...		
„ strangulated . . . . .	22	2	...	...	...	...	...	2	...	...	3	...	...	...	2	1	...	...	...	...		
Femoral, reducible . . . . .	22	...	...	...	1	...	...	1	...	...	6	4	...	...	3	...	...	...	...	...		
„ irreducible . . . . .	18	...	...	...	...	...	...	...	...	...	1	2	...	...	4	...	...	...	...	...		
„ recurrent . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
„ strangulated . . . . .	26	...	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...		
Umbilical, reducible . . . . .	4	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...		
„ irreducible . . . . .	13	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	...		
„ strangulated . . . . .	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
„ recurrent . . . . .	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Ventral, reducible . . . . .	7	...	...	...	...	...	...	1	1	...	1	...	...	...	3	...	...	...	...	...		
„ irreducible . . . . .	7	...	...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	...	...	...		

According to Authorised Nomenclature—continued.

40—				50—				60—				Result.				Remarks.
Dischd.				Dischd.				Dischd.				Dischd.				
L.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
7	1	...	...	8	1	...	...	6	...	1	...	44	3	1	...	Right 33, left 14, double 1. Congenital sac 1; funicular 1; epiplocele 17; enterocele 4; epiplo-enterocele 22; <i>en glissade</i> of sigmoid 3; of cæcum 2. Appendix in sac 3. Inflamed 2. Intestinal obstruction inside sac 1; carcinoma of omentum, secondary to breast 1. Inflamed hernia and appendicitis 1. See also Reducible Inguinal Hernia. Fatal: ruptured stercoral ulceration inside sac, resection and anastomosis. Peritonitis. No P.M.
1	...	...	...	...	...	...	...	...	...	...	...	10	...	...	...	See Special Table I.
3	2	1	...	1	...	2	...	3	...	...	...	16	3	3	...	Enterocele 11; epiplocele 1; epiplo-enterocele 8. Richter 1. Congenital sac 4. Right 15, left 7. Fatal: death under anæsthetic 1; peritonitis 1; pneumonia and phthisis 1.
1	5	...	...	1	...	...	...	...	...	...	...	8	14	...	...	Right 7, left 12, double 3. Readmission 1. Hydrocele of sac 1. Reducible inguinal hernia 1.
...	6	...	...	1	3	...	...	1	...	...	...	2	16	...	...	Readmission 1. Right 10, left 8. Epiplocele 11. Omentum and appendix at neck of sac 1. Hydrocele of sac 3. Blood-cyst of unknown nature 1. See also Appendicitis.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	See Appendicitis, 1 case, and also Strangulated Femoral Hernia.
1	4	...	1	1	5	1	...	1	5	1	3	4	16	2	4	Right 17, left 9. Epiplocele 2; enterocele 10; epiplo-enterocele 10. Appendix in sac 1. Recurrent with immediate strangulation 1. Richter 2; Richter with hydrocele of sac 1. Fatal: peritonitis in all.
1	1	...	...	...	...	...	...	...	...	...	...	2	2	...	...	Infantile 1.
...	5	...	...	1	2	...	...	1	1	...	1	2	10	...	1	Epiplocele 6; epiplo-enterocele 1. Infantile 1. Obstructed 1. Inflamed 1. Fatal: mesenteric thrombosis, resection, and anastomosis. P.M.—Peritonitis. See also Acute Abscess.
...	1	...	4	...	3	...	1	...	2	...	...	6	...	5	...	Enterocele 7; epiplo-enterocele 4. Recurrent hernias 2. Parotitis 1. Fatal: peritonitis 4. Sudden collapse 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Two cases, both strangulated. See above and in Special Table I.
...	1	...	...	...	...	...	...	...	...	...	...	1	6	...	...	After appendix abscess 3. Cœliotomy, for septic oophoritis 1; for "abscess" 1; for appendicitis with local peritonitis 1.
1	1	...	...	1	...	...	...	1	...	...	...	3	4	...	...	Epiplocele 4; enterocele 2. Extra-peritoneal fat 1. Inflamed and ruptured sac with ulceration of bowel; resection and recovery 1. After appendix abscess 1; cœliotomy 2.

TABLE I.—*Abstract, showing Diseases, etc., in Class*

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.		M.	F.			M.	F.			M.	F.			M.	F.		
<b>DIGESTIVE SYSTEM—continued.</b>																					
<b>Hernia—continued.</b>																					
Ventral, strangulated		1																			
„ recurrent		2																	1		
Appendicitis	158					3				28	19			43	28	1		14	9		
„ with abscess	52					7	1			9	5	1	2	6	5	2		3	2		
„ with local spreading peritonitis	29					3	1			1	5	4	3			1	1	1	2	1	
„ general peritonitis	24							2		1		3	5	3	1	2		1			
Intestinal obstruction—																					
Adhesions	9									2	1			1		1					
Bands	5															1				1	
Adherent Meckel's diverticulum	2																		1		
Volvulus	2																				1
Intestinal obstruction and perforated stercoral ulcer	1																				

according to *Authorised Nomenclature*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Recurrent after cœliotomy for fibroids. Enterocœle.
...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	See also above, Strangulated ventral hernia and Special Table I.
6	4	...	...	2	1	...	...	...	...	...	...	96	61	1	...	Acute 5; subacute 1. Tuberculous appendicitis 1. Readmissions 3. Post-operative peri-cæcal abscess 1; also sciatica 1; reducible inguinal hernia 1; recurrent femoral hernia 1; lipoma 1. See also Irreducible Inguinal Hernia. Fatal: appendicectomy after drainage of abscess, residual abscess, empyema. P.M.—Multiple abscesses of liver, microscopically, actinomycosis. See also Medical Report.
1	4	2	...	1	...	...	1	...	...	...	...	27	18	5	2	Readmissions 3, 2 with residual abscess, 1 causing spreading peritonitis. Other recurrent abscesses 2. Leaking abscess 1. Suppurative parotitis and empyema 1. German measles 1. Syphilitic stricture of rectum 1. Subsequent intestinal obstruction and secondary hæmorrhage 1. See also Carcinoma of Pylorus. Fatal: peritonitis in all, cæcal perforation 1. Endothelioma of appendix 1.
...	1	1	1	1	...	...	...	...	1	...	...	10	9	7	3	Previous abscess 1; diffusion of abscess 2. Irreducible femoral hernia 1. Fatal: diffuse peritonitis 8; bronchitis 1; lobar pneumonia 1.
...	3	...	...	...	1	...	1	...	1	...	...	6	12	5	5	Previous abscess 1; diffusion of abscess 1; residual abscess 1; erysipelas 1; parotitis 1.
...	1	...	...	...	...	...	...	...	1	1	...	4	2	3	3	To tuberculous mesenteric gland 2; after appendicitis 1; after appendicitis and general peritonitis (operation) 1; chronic peritonitis 1 (? renal); tubal inflammation 1; peri-cæcal 1. See also Appendicitis with Abscess. Fatal: fæcal fistula 1; acute dilatation of stomach 1; unrelieved obstruction 3.
...	...	...	...	...	1	...	...	...	2	...	...	2	...	3	3	After abdominal hysterectomy 1; vaginal discharge 1. Fatal: small bowel obstruction by band and large by carcinoma of hepatic flexure 1; left broad ligament 1.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	Both adherent to mesentery. Fatal: resection, general peritonitis. See 'Lancet,' Feb. 17, 1905.
...	1	...	...	...	...	...	...	...	...	...	...	1	...	1	...	Cæcum 1; sigmoid 1. After sigmoido-sigmoidostomy 1. Fatal: parotitis, empyemas, peritonitis.
...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	? Carcinoma of colon, stercoral ulcer of cæcum; cœcostomy; no P.M.

TABLE I.—*Abstract, showing Diseases, etc., in Classes*

DISEASE.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>																					
Perforated ulcers of intestine . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculous peritonitis . . . . .	2	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...
Encysted peritonitis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Acute general peritonitis . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
“Mucoid” peritonitis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulcerative colitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Enteritis . . . . .	3	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...
Volvulus of omentum . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Subphrenic abscess . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Perforated peptic ulcer of jejunum . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Pericæcal adhesions . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	1
Artificial anus . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Fæcal fistula . . . . .	7	...	...	...	...	...	...	...	...	1	...	...	...	1	1	...	...	...	...	1	...
Enteroptosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Abdominal pain . . . . .	24	1	...	...	...	...	...	...	...	1	...	...	...	8	...	...	...	...	3	3	...
Cirrhosis of liver . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Dyspepsia . . . . .	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Abdominal neurosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Pericholecystitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Cholelithiasis . . . . .	29	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	7	...
Fistula in ano . . . . .	29	1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	...	...	8	1	...

according to *Authorised Nomenclature*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
					1								1			Intra-peritoneal abscess, multiple ulcers, nature undetermined. P.M.—Peritonitis.
													2			Fæcal fistula 1; exploratory celiotomy 1.
													1			Not tuberculous.
1					2							1	2			Inflamed irreducible omental hernia 1. Fatal: perforated stercoral ulcer of ileum 1; unknown cause 1.
									1				1			After ovariectomy for ruptured ovarian cyst.
													1	1		Ileostomy opening 1; right colostomy opening 1; ileo-sigmoidostomy 2. P.M.—General peritonitis in both.
													3			Celiotomy 1.
1													1			Diagnosed as appendicitis. See Special Abstract.
													1			
													1			After anterior gastro-jejunostomy. See 'Lancet,' Feb. 1st, 1906.
													1	1		After appendicectomy 1; simulating tumour of cæcum 1. Fatal: post-operative fæcal fistula.
1													2			Temporary obstruction 1.
1	2												3	4		After appendix abscess 1; appendicectomy 1; nephrectomy 1; gastro-jejunostomy 1; aspiration of intra-peritoneal abscess 1; drainage of pyosalpinx (tuberculous) 1; readmission 1.
													1			
1	3			2	1			1					9	15		Readmission 2. After anterior gastro-jejunostomy 3; after suture of perforated gastric ulcer 2; after appendicectomy 1; after celiotomy and reduction of intussusception 1; after cholecystostomy 1. Celiotomy 9; posterior gastro-jejunostomy 1; "wandering spleen" 1. Transferred to Medical side 2. See also Caries of Tarsus.
													1	2		Morison's operation 2; transferred to Medical side, 1.
1	1				1								1	3		Vomiting and pyrexia. Transferred to Medical side.
													1			Cholecystostomy 1; division of adhesions 1.
1													2			Readmission 3. Empyema 2; hydrops 3; gangrenous cholecystitis 1. Impacted stone in common duct 3; in cystic duct 3. Biliary fistula 6. Fatal: peritonitis 2; cholangitis and suppurative phlebitis of inferior vena cava 1. Transferred to Medical side for pleurisy 1.
2	6			1	6			1		3		1	3	23		Readmission 2; blind external 18; complete 9; horseshoe 1; phthisis 1. Sebaceous cysts of neck 1. See also under Anal Abscess.
11					4								28	1		

TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—				5—				10—				20—				30—					
		Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
<b>DIGESTIVE SYSTEM—continued.</b>																							
Fissure in ano . . . . .	10	...	...	...	...	...	...	...	...	2	...	...	2	1	...	...	2	1	...	...	...	...	
Hæmorrhoids . . . . .	65	...	...	...	...	...	...	...	...	...	...	...	8	9	...	...	16	14	...	...	...	...	
Stricture of rectum . . . . .	2	...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	
Rectal prolapse . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	
Rectal pain . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Rectal incontinence . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Deformity of anus . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>GENITO-URINARY SYSTEM.</b>																							
Stricture . . . . .	49	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	13	...	...	...	...	...	
Enlarged prostate . . . . .	31	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Acute prostatitis . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	...	...	...	
Phimosis . . . . .	7	...	...	...	2	...	...	1	...	...	...	2	...	...	...	1	...	...	...	...	...	...	
Urinary fistula . . . . .	3	...	...	...	...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	
Impacted urethral calculus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hæmaturia . . . . .	12	1	1	...	...	...	...	1	...	...	...	4	...	...	...	2	1	...	...	...	...	...	
Pyuria . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Dysuria . . . . .	4	...	...	...	...	...	...	2	...	...	...	1	1	...	...	...	...	...	...	...	...	...	



## According to Authorised Nomenclature—continued.

40—			50—			60—			Result.			Remarks.
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
M.	F.		M.	F.		M.	F.		M.	F.		
1			1						4	6		Readmission 1; papilloma of thigh 1. See also under Turbinal Hypertrophy.
9	5		3			1			37	28		Readmission 3; prolapsed and thrombosed 2; rectal prolapse 1; rectal prolapse and cystocele 1; transferred to Gynecological ward. Lipoma 1. See also under Vaginal Hydrocele and Urethral Caruncle.
										2		Readmission of same case, excision and colostomy for tuberculous stricture. See also under Appendix Abscess.
			1						1	2		After partial Whitehead 1.
									1			Hypochondriasis, ? fissure <i>in ano</i> .
			1						1			After Whitehead.
									1			Probably congenital.
15	2		10	2		1	1		44	5		Readmission 2; penile 1; bulbous and bulbo-membranous 46; congenital meatal stricture 1; traumatic 1; fistula 4; peri-urethral abscess 7; extravasation 4; urethral calculus 1; retention 15; cystitis 8. See also under Enlarged Prostate. Fatal: infective endocarditis 1; extravasation and cellulitis 2; pulmonary and aortic atheroma 1; interstitial nephritis and hypostatic pneumonia 1.
			6			12	13		18	18		Retention 16; cystitis 15; vesical calculi 3; prostatic calculus 1; bulbous urethral stricture 1; extravasation 1; supra-pubic fistula 1. Fatal: cystitis and ascending nephritis 6; cystitis 8; hydronephrosis 2; peritonitis 1; broncho-pneumonia 1; hæmorrhage into bladder 1. Supra-pubic prostatectomy 7; enucleation of adenomata 7; cystostomy 7.
									8			Suppurative 2; retention 2.
1									7			Congenital 4; acquired 3; soft chancre 2. See also under Reducible inguinal hernia, Eczema, Fractured humerus.
						1			8			Perineal 2; supra-pubic and penile 1.
			1						1			
			1			1			9	8		Cystoscopy 3; supra-pubic cystotomy 3; exploration of kidney 3; nephrectomy 1. Tubercle bacilli present in urine 1. Readmission 1.
									1	1		Exploratory colotomy 1.
									3	1		No cause found by examination under anæsthetic 3; thickening in membranous urethra 1.

TABLE I.—*Abstract, showing Diseases, etc., in Classes*

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
GENITO-URINARY SYSTEM—cont.																						
Bacilluria . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...		
Extravasation of urine . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
? Urethral calculus . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
? Recto-vesical fistula . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		
Cystitis . . . . .	8	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	2	...	...		
Tuberculous cystitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...		
Vesical bilharziosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		
Vesical calculus . . . . .	6	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...		
Renal calculus . . . . .	10	...	...	...	...	...	...	...	2	...	...	...	3	...	...	...	...	2	1	...		
Nephroptosis . . . . .	28	...	...	...	...	...	...	...	...	...	...	...	5	...	...	...	...	14	...	...		
Hydronephrosis . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	1	...		
Pyonephrosis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...		
Tuberculous kidney . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...		
Renal colic . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...		
Nephralgia . . . . .	4	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	2	...	...		
Renal bilharziosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...		
Epididymitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...		
Orchitis . . . . .	3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...		
Testis, undescended . . . . .	10	...	...	...	...	2	...	...	7	...	...	...	1	...	...	...	...	...	...	...		
„ tuberculous . . . . .	17	...	...	...	...	...	...	...	2	...	...	...	5	...	...	...	...	7	...	...		
„ syphilitic . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...		
Hydrocele . . . . .	37	1	...	1	...	1	...	...	6	...	...	...	15	...	...	...	...	3	...	...		
Hæmatocele . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		
Chronic mastitis . . . . .	23	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	...	7	...	...		
Subacute mastitis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...		
Tuberculous mastitis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...		

according to *Authorised Nomenclature*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.			Died.	Dischd.			Died.	Dischd.			Died.	Dischd.			Died.	
I.	F.	M.		I.	F.	M.		I.	F.	M.		I.	F.	M.		
...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	Readmission 1. All tuberculous. Cystoscopy and segregation 2. Peri-urethral abscess 1. Marmorck's serum 1.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	? Partial rupture of urethra.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Examination under anæsthetic, no calculus felt.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Exploratory cœliotomy, no communication found.	
3	...	...	...	...	...	...	...	...	1	...	...	5	2	1	Chronic in all; supra-pubic fistula 1; pure culture of colon bacillus 1; erysipelas 1. See Special Table II. Fatal: extravasation, chronic interstitial nephritis.	
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	Tubercle bacilli present in 1, treated with tuberculin.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Transferred to Medical side.	
...	...	...	1	...	...	...	1	...	1	...	...	5	...	1	Fatal: multiple uric acid calculi, extravasation, ascending pyelitis. See also under Enlarged Prostate.	
...	1	...	...	1	...	...	...	...	...	...	...	7	2	1	Readmission 1; right 6; left 3; right and left 1. Nephrolithotomy 7; dorsal caries 1; pyelitis 1. Fatal: perinephric abscess, death under anæsthetic.	
...	4	...	...	5	...	...	...	...	...	...	...	28	...	...	Readmission 3. Right 22; left 1; right and left 5. Pyuria 1. Nephropexy 21.	
1	...	...	...	1	...	...	...	...	...	...	...	3	2	...	Calculus 1; nephrotomy 2; nephrectomy 3. Right 3; left 2.	
...	...	...	...	1	...	...	...	...	...	...	...	2	...	...	Tuberculous kidney 1; right femoral thrombosis 1.	
...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	Cortical 1.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	4	...	...	Exploratory nephrotomy 1, post-operative erysipelas. See Special Table II.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Bilateral renal colic.	
...	...	...	...	...	...	...	...	1	...	...	...	2	...	...	Acute 1; chronic 1, partial epididymectomy.	
...	...	...	...	...	...	...	...	...	...	...	...	3	...	...	Readmission 1. Suppurative 1; orchidectomy 1.	
...	...	...	...	...	...	...	...	...	...	...	...	10	...	...	Right 3; left 1; bilateral 6. See also Reducible Inguinal Hernia, with 1 case of doubtful sex.	
3	...	...	...	...	...	...	...	...	...	...	...	17	...	...	Readmission 1. Right 5; left 12. Tuberculous prostatitis and perineal urinary fistula 1.	
1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
6	...	...	4	...	...	...	...	...	...	...	...	36	...	1	Vaginal 32; right 14; left 15; bilateral 8; recurrent 2; congenital 1; infantile 2; of cord 2. After excision of varicocele 4; after radical cure of hernia 1. Hæmorrhoids 1. Fatal: broncho-pneumonia. See also under Reducible Inguinal Hernia.	
...	...	...	1	...	...	...	...	...	1	...	...	2	...	1	Fatal: enlarged prostate, cystitis and pyelonephritis.	
13	...	...	1	...	...	...	...	...	...	...	...	23	...	...	Cystic 16; lobar 1; bilateral 2; dental cyst 1.	
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	

TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>GENITO-URINARY SYSTEM—cont.</b>																						
? Sarcoma of breast . . . . .	1																					
Ruptured tubal pregnancy . . . . .	2																		2			
Salpingitis . . . . .	4																1		1			
Fibro-myoma of uterus . . . . .	3																		2			
Adenoma of endometrium . . . . .	1																					
Septic endometritis . . . . .	1																		1			
Uterine pregnancy . . . . .	1																		1			
Urethral caruncle . . . . .	3															1						
<b>VASCULAR SYSTEM.</b>																						
Aneurysm . . . . .	6																		2			
Varicose veins . . . . .	110									13	1			35	30				12	9		
Varicocele . . . . .	101									53				45					2			
Gangrene, senile . . . . .	4																					
„ dry . . . . .	2																					
„ moist . . . . .	5						1															
„ traumatic . . . . .	1																		1			
Carbuncle . . . . .	11																		1			
Furunculosis . . . . .	1														1							
Gangrenous stomatitis . . . . .	1																					
Hæmatoma . . . . .	9									2					1				1	2		
Thrombosis of axillary vein . . . . .	1														1							
„ of internal saphenous . . . . .	1																		1			

ording to *Authorised Nomenclature*—continued.

40—		50—				60—				Result.				Remarks.
Dischd.	Died.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
				1							1			No operation in 1905. Granuloma removed in 1904.
											2			Also uterine pregnancy in 1 case, 2 months' abortion on 6th day.
1											2			2 Suppurative 3; pelvic peritonitis 1. Fatal: both general peritonitis.
1											3			All subperitoneal. Transferred to Gynecological ward 1.
1											1			Ruptured perineum. Transferred to Gynecological ward.
											1			After miscarriage.
											1			
2											3			Readmission 1. Recurrent 1.
1						3					5	1		Popliteal 2; axillary 1; common femoral 1; thoracic aorta (transferred to Medical side) 1. Readmission 1. Fatal: multiple septic sores of leg, large blood-cyst of spleen.
4		1	1			1					65	45		Readmission 1. Bilateral 57; thrombosed 2; iliac thrombosis 1; femoral thrombosis 1; ulcer 5; eczema 2; varicocele 3; pes planus 1; hammer-toes 1; displaced semilunar cartilage 1; gumma of sternum 1; third nerve paresis 1; previous operation on veins 2. See also under Varicocele, Hammer-toes, Reducible Inguinal Hernia.
											101			Left 100; bilateral 1. Service candidates 64. Painful 21. Varicose veins 7; osteoma of tibia 1; hammer-toes 1; post-operative hydrocele 1; recurrent hæmorrhage 2. See also under Reducible Inguinal Hernia, Varicose Veins.
				1		1		2		1	3			Thrombosis of right femoral vein 1. Fatal: arteriosclerosis in all. No albumen or sugar in urine.
						1				1		1		Glycosuria 1; glycosuria and albuminuria 1, fatal case.
		1		2				1		1	1	3		Fatal: urine contained glucose, acetone, and diacetic acid in all; diabetic coma 1; non-fatal: glucose in 1.
										1				
2		2				4	1			8	3			Glycosuria 1. Glycosuria and albuminuria 1. Axillary, also Tuberculous knee.
		1									1			Aspiration pneumonia.
						1				5	4			Bilateral hæmatoma auris 1. Scrotum 2.
										1				
										1				Infective.

TABLE I.—*Abstract, showing Diseases, etc., in Cla*

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
<b>VASCULAR SYSTEM—continued.</b>																					
Recurrent hæmorrhage . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Secondary hæmorrhage . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hæmophilia . . . . .	2	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Hæmorrhage after tonsillotomy . . . . .	3	...	...	...	...	1	...	...	1	...	1	...	...	...	...	...	...	...	...	...	
Epistaxis . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>LYMPHATIC SYSTEM.</b>																					
Simple adenitis . . . . .	15	...	1	...	...	2	2	...	...	2	...	...	...	...	3	...	...	...	3	1	
Tuberculous adenitis . . . . .	81	3	2	...	...	7	7	...	...	10	12	...	...	...	10	18	...	...	2	6	
Lymphadenoma . . . . .	7	...	...	...	...	1	1	...	...	...	...	...	...	...	3	...	...	...	...	...	
Lymphoma . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	
Lymphangitis . . . . .	3	...	...	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	
Elephantiasis lymphaticus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Enlarged glands in neck . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>THYROID.</b>																					
Parenchymatous goitre . . . . .	10	...	...	...	...	...	...	...	...	2	3	1	1	...	1	1	...	...	...	1	
Adenoma . . . . .	15	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4	...	...	...	4	
Cyst of thyroid . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
<b>OSSEOUS SYSTEM.</b>																					
<i>Epiphysitis—</i>																					
Humerus . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Radius . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Femur . . . . .	2	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Tibia . . . . .	4	2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	
<i>Acute osteomyelitis—</i>																					
Femur . . . . .	2	...	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	
Tibia . . . . .	3	...	...	...	...	1	...	1	...	...	...	...	1	...	...	...	...	...	...	...	
<i>Subacute osteomyelitis—</i>																					
Femur . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	
<i>Chronic osteomyelitis—</i>																					
Radius . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Femur . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	
Tibia . . . . .	3	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...	...	...	...	
Hallux . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	
<i>Subacute infective osteo-perio stitis</i>																					
Femur . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	

ording to *Authorised Nomenclature*—continued.

40—			50—			60—			Result.			Remarks.
Dischd.			Dischd.			Dischd.			Dischd.			
M.	F.	F.	M.	F.	F.	M.	F.	F.	M.	F.	F.	
1									1			Ulnar artery.
									1			After amputation of thumb.
									2			Same case, glossal hæmorrhage, epistaxis.
									1	1	1	Fatal: organs healthy.
									1			Same case.
						1			11	4		Chronic 6; subacute and suppurating 9. Erysipelas 1. See Special Table II.
1	2		1						34	47		Readmission 7; abscess 8; sinus 5; tonsils and adenoids 1.
1						1			4	3		Cyst of axilla 1.
1									1	1		Leg in all.
									3			Leg, ? carcinomatous glands in groin.
			2						3			? Carcinoma 2; ? syphilitic 1.
									2	5	2	Fatal: suppurative mediastinitis 1; septic broncho-pneumonia 1; pyæmia 1.
1			1	3					3	12		Cystic 5; fibro-adenoma 1. See also Encapsuled Carcinoma under Carcinoma.
			1						1			Inflamed.
										1		Acute; upper epiphysis. Septicæmia.
										1		Tuberculous; lower epiphysis; also dactylitis.
									1	1		Acute 1, erysipelas; congenital syphilis 1. Both lower epiphysis.
									4			Acute 2, same case readmitted; tuberculous 2; all lower epiphysis.
									1		1	Fatal: pyæmia.
									1	1	1	Fatal: suppurative myocarditis 1; septicæmia 1.
									1			
										1		Tuberculous.
									1			Typhoid. Enteric in 1902; bacilli still present, Dec. 1905.
									3			One readmission of former acute case.
										1		Tuberculous dactylitis.
										1		

TABLE I.—*Abstract, showing Diseases, etc., in Class*

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
OSSEOUS SYSTEM—continued.																						
Chronic Osteo-periostitis—																						
Radius . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Fibula . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...
Periostitis—																						
Femur . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Os calcis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Osteitis—																						
Radius . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Carpus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...
Tibia . . . . .	3	...	...	...	1	...	...	...	1	...	...	...	...	1	...	...	...	...	...	...	...	...
Femur . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Os calcis . . . . .	2	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	...
Caries—																						
Mastoid process . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Maxilla . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Sternum . . . . .	4	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Rib . . . . .	9	...	...	...	1	...	...	...	2	...	...	...	...	2	...	...	...	1	...	...	...	...
Os innominatum . . . . .	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Humerus . . . . .	4	...	...	...	...	...	...	...	2	...	...	...	1	...	...	...	...	...	...	1	...	...
Ulna . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tibia . . . . .	2	...	...	...	...	...	...	...	1	1	...	...	...	...	...	...	...	...	...	...	...	...
Tarsus . . . . .	5	...	...	...	1	...	...	...	1	2	...	...	1	...	...	...	...	...	...	...	...	...
Os calcis . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Metatarsus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Multiple caries . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
Necrosis—																						
Palate . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Maxilla . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Mandible . . . . .	6	...	...	...	...	...	...	...	1	...	1	3	1	...	...	...	...	...	...	...	...	...
Rib . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...
Humerus . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ulna . . . . .	4	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	2	...	...	...	...	...
Phalanx . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...
Femur . . . . .	18	1	1	...	...	...	...	...	8	1	...	2	...	...	...	1	...	...	1	...	...	...
Tibia . . . . .	3	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Metatarsus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Multiple necrosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...
Separation of tibial tubercle . . . . .	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...
ARTICULAR SYSTEM.																						
Shoulder—																						
Tuberculous arthritis . . . . .	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ankylosis . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...



According to Authorised Nomenclature—continued.

4—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
										1						Traumatic.
										1						Proved subsequently to be sarcoma. See Report, 1906.
			1							1						Abcess.
										1						Syphilitic.
										1						Traumatic.
										1						Tuberculous.
										3						Tuberculous.
										2						Neck 1; tuberculous, of lesser trochanter 1.
										1	1					Tuberculous 1; tonsillitis 1.
										1						
										1						
1			1							8	1					Ribs also 1. Phthisis 1.
1	2									5	4					Recurrent urethral caruncle 1. Tuberculous sinus of leg 1.
	1									2	1					Previous Furneaux Jordan for tuberculous hip 1, readmitted.
										3	1					Readmission 1.
										1						
										1	1					Tibial tubercle 1. Enlarged tonsils and adenoids 1.
										3	2					Phthisis 1.
										1						
			1							1						Generalised tuberculosis, transferred to Medical side.
										1						Malar bone, humerus, radius, and ulna, with tuberculous submental glands.
			1							1						
										1						Also mandible, with pathological fracture.
										4	1	1				Fatal: septic broncho-pneumonia.
										1						After empyema.
										1						
										3	1					Tuberculous elbow 1.
1										1	1					Index 1; pollex 1.
2	2									14	4					Readmission 3. Total necrosis 1. Scarlet fever 1.
																After compound fracture 1.
										3						Readmission 1.
			1							1						
										1						Metacarpus, radius, and ulna.
										2						Trauma in both.
										1						
										1						After excision; sinus present.

TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>ARTICULAR SYSTEM—continued.</b>																						
<i>Acromio-clavicular joint—</i>																						
Tuberculous arthritis . . . . .	1																					
<i>Elbow—</i>																						
Tuberculous arthritis . . . . .	7	1							1	1			2					1				
Gonorrhœal arthritis . . . . .	1													1								
Ankylosis . . . . .	4												3					1				
<i>Wrist—</i>																						
Ankylosis . . . . .	1													1								
Sacro-iliac disease . . . . .	2																					
<i>Hip—</i>																						
Tuberculous arthritis . . . . .	59	2	1			10	8			18	11			4	2			3				
Subacute infective arthritis . . . . .	2									1				1								
Osteo-arthritis . . . . .	2																		1			
Neuropathic arthritis . . . . .	1																					
Coxalgia . . . . .	3									2				1								
Neuromimesis . . . . .	1									1												
Ankylosis . . . . .	5					1				2	1								1			
<i>Knee—</i>																						
Tuberculous arthritis . . . . .	45	4	3			10	2			4	5			4	2			4	2			
Infective arthritis . . . . .	1										1											
Synovitis . . . . .	5									2	1			2								
Gonorrhœal arthritis . . . . .	2													1				1				
Syphilitic arthritis . . . . .	2														1			1				
Ankylosis . . . . .	7									2	2			1				1				
Dislocation of semilunar cartilage . . . . .	10									1				4				4				
Loose body in knee . . . . .	4													3					1			
Internal derangement of knee . . . . .	5										1			3				1				
Neuropathic arthritis . . . . .	1																		1			
<b>NERVOUS SYSTEM.</b>																						
Trigeminal neuralgia . . . . .	7														2			1	1			
Sciatica . . . . .	1																	1				
Erb's paralysis . . . . .	1	1																				

According to *Authorised Nomenclature*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
					1								1			
	1											5	2			Readmission 1. Sinus 2; abscess 2; cellulitis of arm 1. See also under Tuberculous Knee and Necrosis of Ulna.
													1			
												8	1			All after injury. Readmission 1.
													1			Fibrous, after cellulitis and erysipelas. Tuberculous wrist. See under Tuberculous Knee.
	1		1										1		1	Fatal: tuberculous meningitis.
												37	22			Readmission 8; abscess 16; sinus 15; abscess and sinus 8; ankylosis 3; abscess of leg 1; tuberculous knee 1; necrosis of mandible 1; bilateral 3; caries sicca 1. Previous Furneaux Jordan 3; lardaceous disease 1.
													2			
					1							1	1			Also ankle and wrists 1.
	1											1				Also knee, tabetic.
												8				
												1				
												2	8			After tuberculous arthritis 4; bony ankylosis, bilateral, after infective arthritis 1.
	1			2				1	1			29	16			Readmission 10; ankylosis 1; tuberculous wrist and elbow 1; tuberculous glands of neck 1; fractured femur 1.
														1		P.M.—Pyæmia, purulent pericarditis.
												4	1			Subacute 2; bilateral 1.
												2				Both bilateral.
												1	1			Congenital syphilis 1.
	1											8	4			Readmission 1. Bony ankylosis 3, after excision; fibrous 4. Congenital syphilis 1; erysipelas 1.
													9	1		All internal; lacerated 3; recurrent hæmorrhage 1. See also under Salivary Calculus and Varicose Veins.
												8	1			Fringe body 3.
												4	1			? Dislocated internal cartilage 2, external 1; nipped fringe 2.
													1			Tubes.
					2	1							3	4		
													1			See also under Appendicitis.
													1			Forceps delivery with traction on arm.

TABLE I.—*Abstract, showing Diseases, etc., in Class*

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
<b>NERVOUS SYSTEM—continued.</b>																					
Musculo-spiral paralysis . . . . .	1	1						1													
Facial paralysis . . . . .	1	1														1					
Hydrocephalus . . . . .	2	1			1																
Traumatic epilepsy . . . . .	4	1						1													
Spastic hemiplegia . . . . .	1	1						1													
Tuberculous meningitis . . . . .	1	1			1																
Intra-cranial tumour . . . . .	2	2						1					1								
Petit mal . . . . .	1	1																			
Sacralgia . . . . .	1	1																			
Painful stump . . . . .	2	2																			
Hypochondriasis . . . . .	1	1																			
Neurasthenia . . . . .	1	1																			
Hysteria . . . . .	5	5											4			1					
<b>RESPIRATORY SYSTEM.</b>																					
Rhinitis . . . . .	2	2											1								
Hypertrophic rhinitis . . . . .	21	21						1	3			1	9			1	2				
Atrophic rhinitis . . . . .	1	1											1								
Deflected septum nasi . . . . .	10	10				1		2	2			3				1					
Septal spur . . . . .	1	1										1									
Nasal polypi . . . . .	5	5											2				1				
Depressed nasal bridge . . . . .	1	1				1															
Maxillary antrum—																					
Empyema . . . . .	15	15				1		1	3			2	6								
Chronic arthritis . . . . .	1	1										1									
Frontal sinus—																					
Empyema . . . . .	1	1																			
Ethmoidal cells—																					
Caries . . . . .	1	1						1													
Laryngitis . . . . .	4	4															2				
<b>AUDITORY SYSTEM.</b>																					
Acute otitis media . . . . .	2	2				1															
Perichondritis of external meatus . . . . .	1	1															1				
Otitis media suppurativa—																					
Acute mastoiditis . . . . .	35	4				6	3		8	4		3	3								
Subacute mastoiditis . . . . .	3	3				1			1			1									
Mastoid abscess . . . . .	3	1															2				
Chronic mastoiditis . . . . .	111	1	3		1	6	9		25	21		9	15			8	4				

*According to Authorised Nomenclature—continued.*

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												1				After supra-condylar fracture of humerus.
												1				Facio-hypoglossal and hypoglosso-lingual anastomosis.
												1		1		Fatal: pyocephalus.
												1	3			Readmission 2, same case.
												1				
												1				
												1	1			Fatal: hernia cerebri, pyocephalus, no tumour present at P.M.
												1				
												1				
												2				Same case readmitted.
												1				
												1				Abdominal pain.
												6				Pulsating aorta 1; abdominal swelling 1; dyspepsia and rigors 1; neurotic contraction of fingers 1; transferred to Medical side 1.
												2				Acute 1, subacute 1.
								1				7	14			Deflected septum 3; nasal polypi 1; Eustachian obstruction 1; adenoids 1; fissure in ano 1.
												1				
												6	4			Septal spur 2; adenoids 1.
												1				
												1	4			Epiphora 1. See also under Adenoids, Chronic mastoid, and Antrum.
												1				Paraffin injection.
												6	9			Readmission 2; nasal polypi 2.
												1				
												1				Discharging.
												1				
								1				2	2			Readmission 2. Syphilitic 3. One case ? syphilitic, tubercle bacilli present in sputum.
												2				
												1				
												24	11			Erysipelas 1; scarlet fever 1. Facial paralysis 1.
												3				
												1	2			Previous antrotomy 1.
												52	68			Readmission 8. Facial paralysis 3; erysipelas 2; adenoids 2; nasal polypi 1; post-aural opening 9. Fatal: tuberculous meningitis.

TABLE I.—Abstract, showing Diseases, etc., in Class

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>AUDITORY SYSTEM—continued.</b>																						
<b>Otitis media suppurativa—continued.</b>																						
With peri-sinus suppuration	5					2	1			1	1											
„ meningitis serosa	1						1															
„ lateral sinus thrombosis	3										1				1			1				
„ extra-dural abscess	1																					
„ temporo-sphenoidal abscess	4									1		1	1			1						
„ cerebellar abscess	2							1	1													
<b>DISEASES OF SPINE.</b>																						
Caries, cervical	2								1		1											
„ dorsal	6					1				2	2							1				
„ lumbar	17					2	1			1	3			3	1			3	1			
„ sacrum	1																		1			
<b>DISEASES OF BURSE, ETC.</b>																						
Bursitis, acute	14					1				1	1			3	3			1	2			
„ chronic	15									2	2			2	6							
Tenosynovitis, tuberculous	3		1											1								
„ chronic	4									2												
<b>DISEASES OF SKIN AND CONNECTIVE TISSUE.</b>																						
Acute abscess	87	5	1	1	4	3			8	6			11	13			6	8				
Chronic abscess	12		1			1	1			2				5	2							
Special abscess—																						
Gluteal	3									3												
Lumbar	1									1												
Inguinal	1									1												
Peritonsillar	1													1								
Subhepatic	1																	1				
Ulcer—																						
Simple	17					1			1				1	3			1	1				
Tuberculous	2													2								
Gummatous	1									1												

According to *Authorised Nomenclature*—continued.

#—		50—				60—				Result.				Remarks.
Dischd.	Died.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
		F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	
										3	2			
											1			Transferred to Medical side; recovery.
											1	2		
			1								1			
											1	2	1	
											1	1		
											1			1 Fatal: paraplegia, myelitis, broncho-pneumonia.
										3	3			Spastic paraplegia 1; flaccid paraplegia 1; psoas abscess 2; lumbar abscess 1; iliac abscess 1.
2										11	5	1		Readmission 3; psoas abscess 8; recurrent psoas abscess 5; contraction of psoas 1; lumbar abscess 1; iliac abscess 1; congenital hairy mole of face 1. Fatal: bilateral psoas abscess, phthisis.
													1	Gluteal abscess, nephritis, septicæmia.
	2									6	8			Erysipelas 3; all prepatellar.
1			1				1			5	10			Prepatellar 6; biceps femoris 2; gluteal 4; semi-membranosus 2; subdeltoid 1, tuberculous.
	1									1	2			Wrist in all.
	1		1							2	2			Infective 1; ? gout 1.
8	8		3		1		1			46	39	1	1	Readmission 1; erysipelas 1; irreducible umbilical hernia 1; Fatal: diabetes 1; septic meningitis 1. See also under Reducible Inguinal Hernia.
											8	4		Readmission 1; phthisis 1; residual after excision of tuberculous tenosynovitis 1.
											3			Readmission 1. All tuberculous.
											1			Tuberculous.
											1			After radical cure of hernia, with tuberculous peritonitis of sac.
											1			
											1			
2	3		2				2			9	8			Readmission 1; acute eczema 1; soft chancre 1; congenital syphilis 1; splenic anæmia 1, transferred to Medical side.
											2			Anal 1; phthisis 1.
											1			Lip— <i>Spirochæta pallida</i> present in deep tissues.

TABLE I.—Abstract, showing Diseases, etc., in Classes

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>DISEASES OF SKIN AND CONNECTIVE TISSUE—continued.</b>																						
Sinus . . . . .	23					1			2	2			3	2			2	4				
Cellulitis . . . . .	61	1	1	1		2			3	3			10	6	1		11	6	1			
<b>Skin—</b>																						
Lupus vulgaris . . . . .	7	1							3										2			
Tuberculous ulceration . . . . .	2																	2				
Eczema . . . . .	7	1	2										2									
Dermatitis herpetiformis . . . . .	3															1	1					
Mycosis fungoides . . . . .	2																	2				
Erythema nodosum . . . . .	1												1									
<b>DEFORMITIES.</b>																						
Talipes equino-varus . . . . .	17	3	5			2			1				5				1					
„ equino-valgus . . . . .	1								1													
„ equinus . . . . .	7					4			3													
„ calcaneus . . . . .	3								3													
„ calcaneo-valgus . . . . .	1					1																
„ varus . . . . .	2					2																
Torticollis . . . . .	3					1	1		1													
Genu valgum . . . . .	7					1	1		3	1			1									
„ flexum . . . . .	5								1	2			2									
Cicatricial contraction . . . . .	16	2	2			3			2	1			2	2								
Dupuytren's contraction . . . . .	6																	1				
Hammer-toe . . . . .	11								2	5			3	1								
<b>Pes planus . . . . .</b>																						
„ cavus . . . . .	5								3				2									
<b>Hallux valgus . . . . .</b>																						
„ rigidus . . . . .	5								2				3									



According to Authorised Nomenclature—continued.

40—				50—				60—				Result.				Remarks..
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
2	4			1								10	13			Readmission 3; hernia plate 2; Roux's staple 1, stitch 3.
7	1			3	1			2		1		39	18	4		Erysipelas 2; pelvic cellulitis 3; urethral stricture 1; infective thrombosis 1. Fatal: diabetes 1; death under chloroform 2.
	1											4	3			Face 4; leg 2; neck 1. Carcinoma arising in lupus 1. See under Squamous-celled Carcinoma.
												2				Same case readmitted after amputation for tuberculous osteomyelitis of femur.
	1									1		1	6			Phimosis 1.
	1									1		1	1	1		Fatal: pyuria, toxæmia.
												2				Same case readmitted. X rays.
										1						
												5	12			Readmission 1; congenital 9; supra-nuclear lesion 1; bilateral 6; intra-uterine amputation of fingers 1; adenoids 1.
												1				Congenital; osteoma of tibia.
												4	3			Congenital 1; bilateral 3; tendon transplantation 1.
												3				Readmission 1; Pirogoff 1; tendon transplantation 1. All paralytic.
												1				Paralytic, tendon transplantation.
												2				Paralytic; arthrodesis of ankle 1.
												2	1			Congenital in all. Right 2; left 1.
												4	3			Bilateral 6.
												1	4			After excision 3; after hæmophilic hæmarthrosis 1; after osteotomy of femur 1.
	1			1								7	9			Readmission 1; after cancrum oris 1, Esmarch's operation.
3				1				1				6				Minimus 3; annularis and minimus 2; bilateral, medius, and minimus 1.
												5	6			Ingrowing toenails 1; varicose veins 1; osteoma of tibia 1; necrosis of metatarsus 1. See also under Varicose Veins and Varicocèle.
												5	2			Readmission 1. Hallux rigidus 1. See also under Hallux Rigidus.
												2	3			Readmission 1. Traumatic 1; paralytic 1; hallux valgus 1. Chopart 1. See also under Varicose Veins, Synovitis of Knee.
1	2							1				4	5			Readmission 1; osteo-arthritis 1; pes planus 1. See also under Pes Cavus.
												5				Pes planus 2. See also under Pes Planus.

TABLE I.—Abstract, showing Diseases, etc., in Classes

DISEASE.	Age.	0—				5—				10—				20—				30—				
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
<b>DEFORMITIES—continued.</b>																						
Malunited fracture . . . . .	2	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...	...	...	...			
Coxa vara . . . . .	8	...	...	...	...	1	...	...	6	1	...	...	...	...	...	...	...	...	...			
Congenital displacement of hip . . . . .	8	...	2	...	...	4	...	...	1	...	...	...	...	...	...	...	1	...	...			
Rickety deformity of legs . . . . .	4	1	...	...	...	2	...	...	1	...	...	...	...	...	...	...	...	...	...			
Ingrowing toe-nails . . . . .	3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	1	...	...			
Deformity of forearm . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...			
Deformity of leg . . . . .	3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...			
Scoliosis . . . . .	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...			
Supernumerary digit . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Deformity of patellæ . . . . .	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...			
Infantile paralysis . . . . .	4	...	...	...	...	1	...	...	1	1	...	1	...	...	...	...	...	...	...			
<b>MALFORMATIONS.</b>																						
Single harelip and cleft palate . . . . .	11	6	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Double harelip and cleft palate . . . . .	9	5	2	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...			
Harelip . . . . .	12	7	4	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...			
Cleft palate . . . . .	22	4	9	...	...	5	3	...	...	1	...	...	...	...	...	...	...	...	...			
Absence of external auditory meatus . . . . .	2	...	...	...	...	...	...	...	1	...	...	1	...	...	...	...	...	...	...			
Anencephalus . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Thyroglossal fistula . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...			
Branchial fistula . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...			
Imperforate anus . . . . .	4	...	1	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Ectopia vesicæ . . . . .	5	2	...	...	...	...	...	...	3	...	...	...	...	...	...	...	...	...	...			
Hypospadias . . . . .	3	1	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...			
Spina bifida . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Exomphalos . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Multiple malformations . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Fusion of radius and ulna . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...			
<b>MEDICAL.</b>																						
Pneumonia . . . . .	2	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...			
Broncho-pneumonia . . . . .	3	...	2	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Constipation . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...			
Diarrhœa and vomiting . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Whooping cough . . . . .	1	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...			
Phthisis . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...			
Acute rheumatism . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...			
Pleural effusion . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...			
Empyema . . . . .	3	...	...	...	...	1	...	...	1	...	...	1	...	...	...	...	...	...	...			
Pyopneumothorax . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...			
<b>TRIVIAL . . . . .</b>																						
	7	...	...	...	...	...	...	...	2	...	...	1	1	...	...	...	1	2	...			

According to Authorised Nomenclature—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												1	1			Tibia 1; humerus 1.
												7	1			Traumatic 2. Bilateral 1.
												1	7			Bilateral 3.
												3	1			Readmission 1.
												2	1			
1												2				After compound fracture of radius and ulna 1; fracture of head of radius 1.
				2								3				After Pott's fracture 2; fracture of femoral neck 1.
												2				Hysterical spine in both.
												1				Hallux.
												1				
												3	1			
												6	5			Umbilical faecal fistula 1.
												6	2	1		Fatal: shock. Readmission 2.
												7	5			Involving alveolar process 2.
												9	13			Readmission 6.
												2				Deformity of auricle.
														1		Also cleft palate. Full term.
												1				
												1				
												1	2	1		Artificial anus 1. Erysipelas. See Special Table II.
												5				Readmission 3. Scarlet fever 1.
												3				
												1				Sacral meningocele, excised.
														1		Hernia of liver, talipes.
														1		Trunk, pelvis, and legs.
												1				Upper extremity.
														2		Transferred to Medical side.
													2	1		Fatal: pleural effusion.
												1				Colic after radical cure of strangulated hernia.
														1		
													1			Hæmoptysis. Died on Medical side.
													1			Cellulitis of ankle.
													1			Transferred to Medical side; serous.
												2	1			Discharging 2.
														1		P.M.—No perforation of lung found.
														2	5	

TABLE I.—Abstract, showing Diseases, etc., in Classes

DISEASE.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.	
			M.	F.	M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.
UNCLASSIFIED.																					
Swallowed nail . . . . .		1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
" safety pin . . . . .		1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
" needle . . . . .		1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
" coin . . . . .		1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Foreign body in bronchus . . . . .		2	...	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...
" " in larynx . . . . .		2	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" " in external auditory meatus . . . . .		1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" " in tympanum . . . . .		1	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" " in oesophagus . . . . .		3	1	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" leg . . . . .		1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
" thumb . . . . .		1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
" small intestine . . . . .		1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Needle in knee . . . . .		5	...	...	...	...	...	...	...	1	3	...	1	...	...	...	...	...	...	...	...
" in hand . . . . .		3	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
" in foot . . . . .		1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...
Wire in patella . . . . .		8	...	...	...	...	...	...	...	...	...	2	...	...	...	2	...	2	2	...	...
" in olecranon . . . . .		2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...
" in radius . . . . .		1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Old head injury . . . . .		2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Iron nut on penis . . . . .		1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Filagree in abdominal wall . . . . .		1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Flexor tendons adherent to scar . . . . .		2	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	...	...
Supposed recurrent carcinoma of breast . . . . .		2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total . . . . .		3349																			

According to Authorised Nomenclature—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												1				Passed <i>per rectum</i> .
												1				Suicidal.
												1				Hysteria.
												1				Halfpenny, broncho-pneumonia; transferred to Medical side.
												1	1			Nail (see Report for 1906). Fatal: bone.
												2				Fishbone 1; metal food regulator 1.
												1				Pea.
													1			Bead.
												1	2			Halfpenny 3.
1												1				Pellets.
												1				Bullet.
												1				Penny, morphia-maniac.
												2	3			
1													3			
												1				
1				1								4	4			Sinus 2; old Syme's amputation 1, reamputation.
												2				Same case readmitted.
												1				After resection for ischaemic paralysis.
				2								2				
				1								1				Retention of urine.
1												1				After Goepel's operation for radical cure of umbilical hernia.
																Same case readmitted, after suture of tendons.
								1				2				After amputation; no evidence of recurrence.
1										1		2				
												1900	1			
												1239	1			
												130	1			
												80	1			
												3349				

TABLE II.—*Abstract, showing Injuries, etc.,*

INJURIES.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
GENERAL INJURIES.																					
Burns . . . . .	26	5	6	1	3	1	2	2	1	...	...	...	...	1	1	1	...	...	1	...	
Scalds . . . . .	24	10	8	2	1	...	2	...	1	...	...	...	...	...	...	...	...	...	...	...	
LOCAL INJURIES.																					
Wounds and contusions of scalp . . . . .	18	...	2	...	...	1	1	...	...	1	...	...	...	1	1	...	...	1	1	...	
" " of face . . . . .	4	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Wound of tongue . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Concussion . . . . .	46	3	6	...	...	6	2	...	...	3	3	...	...	8	1	1	...	3	2	...	
Fractures of vault of skull—																					
Simple fissured fracture . . . . .	2	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Compound fissured fracture . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	
Compound depressed fracture . . . . .	5	...	...	...	...	...	...	1	1	...	...	...	...	1	...	...	...	...	1	...	
Bullet wound of skull . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	
Punctured fracture . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Fracture of outer wall of frontal sinus . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Fractures of vertex and base . . . . .	8	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Fractures of base of skull . . . . .	23	...	...	...	...	1	...	...	...	1	1	...	...	6	1	1	...	1	...	1	
Fractures of face bones—																					
Nasal bones . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	
Maxilla . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
Mandible . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
Injuries of neck—																					
Cut throat . . . . .	10	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	3	2	...	

## Classes, according to Authorised Nomenclature.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
		1								7	10	4	5	Erysipelas 2 (see Special Table II). Fatal: irritant poison 1, suicidal.		
										10	10	2	2	Varicella 2; broncho-pneumonia 1.		
3			1			3	1			1	10	7	1	Scarlet fever 1. Fatal: laceration of brain and pontine hæmorrhage; gunshot wound 1; fractured ribs with surgical emphysema 1. See also under Concussion.		
		1	1							3	1			Comminuted fracture of nasal bones 1.		
										1						
4	2					1	1			28	17	1		Scalp wound 9, ruptured membrana tympani 1; fractured clavicle 2; fractured metacarpal 1; measles 1. Fatal: cortical hæmorrhage.		
				1						1			1	Parietal 2. See also under Fractured Ribs. Fatal: subdural hæmorrhage over both parietal lobes.		
1		2								3	2			Frontal 2; parietal 3.		
		1								2	1	1	1	Parietal 4; frontal 1; gutta fracture 1. Fatal: cortical hæmorrhage 1; meningitis 1.		
													1	Comminution of base and laceration of brain.		
													1	Parietal. P.-M.—Cerebral abscess, meningitis, pycephalus.		
		1								1				Surgical emphysema.		
				1				1					3	Middle fossæ 2; anterior, posterior, and middle fossæ 1; O.M.S. and meningitis, 1; fractured ribs and dislocation (acromial) of clavicle 1; fractured ribs and hæmothorax, 1.		
2	1	4				1		2		12	3	8		Anterior fossæ 4; middle fossæ 14; posterior fossæ 1; anterior and middle fossæ 1; middle and posterior fossæ 3; scalp wounds 2; fractured radii 1; fractured humerus and ribs 1; fractured neck of femur 1; facial paralysis 1; facial weakness 1. Fatal: septic cavernous sinus thrombosis 1.		
										1				See also under Wounds of Face.		
				1						1	1			Compound 1; scalp wound 1.		
										2				Compound externally 1.		
		1		1		1				7	2	1		Skin only 5; thyroid cartilage 2; thyro-hyoid membrane 2; thyro-hyoid muscle 1. Fatal: œdema of lungs.		

TABLE II.—Abstract, showing Injuries, etc.,

INJURIES.	Age.	0—		5—		10—		20—		30—			
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES—continued.													
<i>Injuries of thorax—</i>													
Contusion . . . . .	2	...	1	...	...	1	...	...	...	...	...	...	...
Bullet wounds . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...
Fractured ribs . . . . .	12	1	1	...	...	...	...	...	...	1	...	...	1
<i>Injuries of spine—</i>													
Contusion . . . . .	4	...	...	...	1	...	...	1	...	...	...	1	...
Fracture . . . . .	3	...	...	...	...	...	...	...	...	1	1	...	...
Dislocation . . . . .	2	...	...	...	...	...	...	1	...	...	1	...	...
Fracture-dislocation . . . . .	3	...	...	...	...	...	...	1	...	1	...	...	...
<i>Injuries of abdomen—</i>													
Contusion . . . . .	10	2	...	...	3	...	...	3	...	2	...	...	...
Lacerated wound of abdominal wall	2	...	...	...	...	...	...	1	...	...	...	...	...
Bullet wound . . . . .	1	...	...	...	...	...	...	...	...	...	1	...	...
Perforating wound . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...
Ruptured duodenum and colon . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...
Contusion of kidney . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...
Ruptured kidney . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...
Ruptured liver . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...
<i>Fracture of pelvis</i> . . . . .	7	...	...	1	...	1	...	3	...	...	...	...	...
<i>Injuries of external genitalia—</i>													
Rupture of urethra . . . . .	2	...	...	...	...	...	...	...	...	1	...	...	...
Wound of scrotum . . . . .	3	...	...	...	...	...	...	1	...	...	...	2	...
Wound of prepuce . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...





TABLE II.—Abstract, showing Injuries, etc., i

INJURIES.	Age.	0—		5—		10—		20—		30—	
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>LOCAL INJURIES—continued.</b>											
<i>Injuries of upper extremity—</i>											
Wound of forearm . . . . .	1	...	...	...	1	...	...	...	...	...	...
Crushed forearm . . . . .	1	...	...	...	...	...	...	1	...	...	...
Crushed hand . . . . .	8	...	...	...	...	...	2	...	5	...	1
Crushed fingers . . . . .	4	...	...	...	...	...	...	2	...	2	...
Wound of hand . . . . .	3	...	...	...	...	...	2	...	1	...	...
Wound of wrist . . . . .	2	...	...	...	...	...	...	...	...	...	...
Bullet in hand . . . . .	1	...	...	...	...	...	...	1	...	...	...
Cut finger . . . . .	1	...	...	...	...	...	1	...	...	...	...
Cut tendons . . . . .	5	...	...	...	...	...	...	...	2	...	2
Cut tendons and nerves . . . . .	5	...	...	...	...	...	1	...	4	...	...
<b>Fractures—</b>											
Clavicle . . . . .	3	...	...	...	1	...	1	...	1	...	...
Scapula . . . . .	...	...	...	...	...	...	...	...	...	...	...
Humerus, simple . . . . .	9	...	...	...	2	...	1	1	...	...	4
„ compound . . . . .	1	...	...	...	1	...	...	...	...	...	...
„ compound commi- nuted . . . . .	1	...	...	...	...	...	...	...	...	...	...
Separation of humeral epi- physis . . . . .	1	...	...	...	...	...	1	...	...	...	...
Olecranon . . . . .	3	...	...	...	...	...	1	...	1	...	1
Radius and ulna . . . . .	4	...	...	...	...	...	1	...	1	...	1
Radius . . . . .	2	...	...	...	...	...	...	...	1	...	...
Phalanx . . . . .	1	...	...	...	...	...	...	...	...	...	1
<b>Dislocations—</b>											
Humerus . . . . .	2	...	...	...	...	...	...	...	...	...	...
Radius and ulna . . . . .	2	...	...	...	...	...	...	1	...	...	...
Thumb . . . . .	1	...	...	...	...	...	1	...	...	...	...
<i>Injuries of lower extremity—</i>											
Contusions . . . . .	5	...	...	...	...	...	1	...	1	...	3
Wounds . . . . .	4	...	...	...	...	...	4	...	...	...	...
Bullet wounds . . . . .	3	...	...	...	...	...	2	...	...	...	1



TABLE II.—*Abstract, showing Injuries, etc.,*

INJURIES.	Age.	0—				5—				10—				20—				30—			
		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		Total.																			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES—continued.																					
Injuries of lower extremity—continued.																					
Strain of tendons . . . . .	2														1				1		
Partial rupture of tendo Achilles	1																		1		
Crushed foot . . . . .	2																				
Crushed toes . . . . .	1				1																
Hæmatoma of buttock . . . . .	1														1						
Sprained ankle . . . . .	2														1						
Lacerated wound of knee-joint . .	2																				
Punctured wound of knee-joint . .	1								1										1		
Traumatic synovitis . . . . .	1					2															
Rupture of popliteal artery . . . .	2									1											
Fractures—																					
Shaft of femur, simple . . . . .	37	4				5	2			6	1				4	1			4	1	
Do., compound comminuted . . . . .	2																		1		
Separation of femoral epiphysis . .	1					1															
Neck of femur . . . . .	11									1					1						
Patella . . . . .	37									1					2	2			7	4	
Tibia and fibula, simple . . . . .	59	1	1			4	1			4					6	1			11	2	
Do., compound . . . . .	7																				
Do., compound comminuted . . . . .	6		1																3		
Tibia, simple . . . . .	19					2				2	1				2				4		
Do., comminuted . . . . .	1																		1		
Do., compound . . . . .	2																		1		
Fibula, simple . . . . .	8									1					1				1		
Do., comminuted . . . . .	1				1																
Do., compound comminuted . . . . .	1									1											

*lasses, according to Authorised Nomenclature—continued.*

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	Hamstrings 1; peronei 1.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Fatal: hypostatic pneumonia, acute dilatation of colon.
...	...	1	...	1	...	...	...	...	...	...	...	1	...	1	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Hallux, dry gangrene.
...	...	...	...	...	...	...	...	...	...	1	...	1	...	...	...	Knee. See also under Fractured Femur.
...	...	...	...	...	...	...	...	...	...	1	...	1	1	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	Uncomplicated by fracture; amputation in both cases. See Special Abstracts.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Readmission 1, for refracture; Comminuted 8; greenstick 1; subtrochanteric 5; supracondylar 3; fracture of external tuberosity of tibia 1; refracture in ward 1; traumatic synovitis of knee 1; tuberculous knee 1; tuberculous hip 1; tabes 1; fractured base 1. See also under Tuberculous Knee, Fractured Base, and Fractured Humerus. Transferred to Medical side 1. Splenic anæmia.
2	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	28	9	...	...	Wired 1; scalp wound and fracture of ilium 1. Lower, backward displacement.
4	1	...	...	1	1	...	...	2	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	1	...	...	...	2	...	1	...	Intra-capsular 4; at base of neck 7; impacted intra-capsular 1; impacted at base of neck 3; comminuted 1. See also under Fractured Base.
1	...	...	...	...	...	...	...	...	...	...	...	5	6	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Refracture 1; comminuted 3; T-shaped fracture 1; bilateral 1; ununited fracture of opposite patella 1.
10	4	...	...	4	1	...	...	2	...	...	...	24	13	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	Spiral 1; supra-malleolar 5; through malleoli 4; double fracture 1; comminution 2; also fracture of scapula and rib 1; fracture of opposite fibula 1.
8	4	...	...	5	4	...	...	4	3	...	...	43	16	...	...	
1	1	...	...	1	...	...	...	1	...	...	...	6	1	...	...	Comminution of fibula 1.
...	...	...	...	...	...	...	...	...	...	...	...	4	2	...	...	
2	2	...	...	1	2	...	...	1	...	...	...	13	6	...	...	Also fracture of radius, ulna, humerus, and ribs 1; inoperable carcinoma of breast 1; tabes 1; ununited on discharge.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	Also scalp wound.
2	2	...	...	1	...	...	...	...	...	...	...	6	2	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	See also under Simple Fracture of Tibia and Fibula.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	

TABLE II.—*Abstract, showing Injuries, etc., &*

INJURIES.	Age	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
LOCAL INJURIES—continued.																					
<i>Injuries of lower extremity—continued.</i>																					
Fractures—continued.																					
Pott's fracture . . . . .	27													1	2				8	1	
Astragalus . . . . .	1																		1		
Os calcis . . . . .	3													1							
Metatarsals and phalanges . . . . .	1																				
Dislocations—																					
Hip . . . . .	2		1																		
Sub-astragaloid . . . . .	1													1							
Tarso-metatarsal . . . . .	2									1				1							
Ununited fractures—																					
Radius and ulna . . . . .	1													1							
Olecranon . . . . .	1																		1		
Femoral shaft . . . . .	1																		1		
Femoral neck . . . . .	1																				
Tibia and fibula . . . . .	4					2								1					1		
Tibia . . . . .	1																		1		
Fibula . . . . .	1													1							
Total . . . . .	560																				



TABLE III.

SURGICAL OPERATIONS.	Age.	0—		5—		10—		20—		30—				
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
REMOVAL OF TUMOURS AND NEW GROWTHS.														
Amputation of breast . . .	19									2			3	
Do. and clearance of axilla . .	44									3			4	
Excision of—														
Recurrent mammary carcinoma .	10													
Carcinoma of cervical glands . .	1													
„ of prostate . . .	2													
„ of testis . . .	1													
„ of thyroid . . .	4												3	
„ of pylorus . . .	1												1	
„ of appendix of small intestine	1													
„ of splenic flexure . . .	1												1	
„ of descending colon . . .	1												1	
„ of rectum . . .	4												1	
„ of ovary . . .	2												1	
„ of gall bladder . . .	1													
„ of peritoneum . . .	1													
„ of lip . . .	6												2	
„ of tongue . . .	8													
„ „ recurrent . . .	2													
„ of pharynx . . .	1													
„ of larynx . . .	2													
„ of antrum . . .	4													
„ „ recurrent in cheek . . .	1													
„ of floor of mouth . . .	6													



*Surgical Operations.*

40—				50—				60—				Result.				Remarks.
Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.		
M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	
9	1		2			2			18			1		1	Carcinoma 6; atrophic 1; encephaloid 2; ulcerative 1; chronic mastitis 12; duct papilloma 1. Fatal erysipelas.	
4			10			13			44						Scirrhus 36; encephaloid 2; chronic mastitis 1; tuberculous mastitis 1; fibro-adenoma 2; alveolar sarcoma 1; duct papilloma 1.	
6			3			1			1	9					Local 5; glandular 4; local and glandular 1; resection of ribs 1.	
		1							1						Spheroidal-celled; no primary growth found.	
						1		1	1	1					Enucleation 1; prostatectomy 1.	
1									1						Orchidectomy.	
									1	3					Enucleation of encapsuled carcinoma.	
										1					Previous posterior gastro-jejunostomy, and subsequent appendicectomy for appendix abscess.	
			1							1					Resection, circular anastomosis, and ileo-colostomy. P.M.—General peritonitis due to leakage of ileo-colostomy.	
									1						Axial anastomosis.	
									1						Previous transverse colostomy, resection, lateral implantation.	
2			1						1	3					Trans-sacral 1; perineal 3; subsequent colostomy 1.	
1										2					Bilateral 1.	
			1							1					Hepato-cholecystectomy.	
			1							1					For microscopy.	
			2			1			6						Local recurrence 1; glands also removed 1.	
2			4		1	1			7		1				Buccal route 6; cheek split 1; Langenbeck 1; Symes-Kocher 1; preliminary laryngotomy 1; preliminary tracheotomy 1; previous removal of glands 1; subsequent removal of glands 2. Fatal: septic broncho-pneumonia.	
			1						2						Local recurrence 1; buccal excision; recurrence in submaxillary glands 1.	
	1									1					Glands also removed; preliminary laryngotomy. P.M.—Edema of lungs.	
	1	1								1	1				For microscopy 1; partial laryngectomy 1. P.M.—Septic broncho-pneumonia.	
		1	1				1		2	2					Excision of upper jaw in all, glands also excised in 2; subsequent removal of glands 1.	
							1			1						
			3			2		1	5		1				Portion of lower jaw also removed 3; glands also 3; glands previously removed 1; subsequent excision of glands 1. Fatal: septic broncho-pneumonia.	

TABLE III.—Surgica

SURGICAL OPERATIONS.	Age.	0—		5—		10—		20—		30—			
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
REMOVAL OF TUMOURS AND NEW GROWTHS—continued.													
Excision of—continued.													
Carcinoma of pinna . . . . .	1												
"    "    recurrent in glands . . . . .	2												
"    of face . . . . .	3												
"    of thigh . . . . .	1											1	
"    of bladder . . . . .	2												
"    of buttock and perineum . . . . .	1												
"    of sole of foot . . . . .	1												
"    of inguinal glands . . . . .	1												
"    of penis . . . . .	2												
"    of vulva . . . . .	1												
Rodent ulcer . . . . .	4												
Sarcoma of skin of face . . . . .	3				1			1		1			
"    "    of leg . . . . .	1												
"    "    of breast . . . . .	1							1					
"    "    of chest . . . . .	1									1			
"    "    of arm . . . . .	1												
"    of glands of neck . . . . .	2								1			1	
"    "    of groin . . . . .	1												
"    of mons veneris . . . . .	1										1		
"    of testis . . . . .	3							1					
"    of pylorus . . . . .	1												
"    of erector spinæ . . . . .	1								1				
"    of mandible . . . . .	2							1		1			
"    of femur . . . . .	2									1		1	
"    of naso-pharynx . . . . .	1							1					
Recurrent sarcoma of cheek . . . . .	1												
"    "    of brachial plexus . . . . .	1												
"    "    of skin of leg . . . . .	2							1					
"    "    of humerus . . . . .	1							1					
Endothelioma . . . . .	5											1	1



TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.					
																		M.	F.	M.	F.
REMOVAL OF TUMOURS AND NEW GROWTHS—continued.																					
Recurrent endothelioma	1																				
Lipoma . . . . .	22				1				1		1	2			2	5					
Myxoma . . . . .	1																				
Fibroma . . . . .	3				1										1						
Chondroma . . . . .	1				1																
Osteoma . . . . .	13				1				4	2		5	1								
Neuro-fibroma . . . . .	2											1					1				
Nævus, excision . . . . .	2		2																		
„ electrolysis . . . . .	4		4																		
Adenoids . . . . .	47	3	1		11	4			7	11		4	5			1					
Tonsillotomy . . . . .	2								1			1									
Papilloma of larynx . . . . .	2		1						1												
„ of hallux . . . . .	1															1					
„ of hand . . . . .	1														1						
„ of cheek . . . . .	1																				
„ of thigh . . . . .	1				1							1									
„ of skin of breast and abdomen . . . . .	1																				
Adenoma of breast . . . . .	8								1			6				1					
„ of supra-renal . . . . .	1																				
Granuloma . . . . .	6								1			2									
Cysts—																					
Dermoid . . . . .	6		1						2		3										
Sebaceous . . . . .	8										1				1	1					
Mucous . . . . .	1																				
Thyroglossal . . . . .	1		1																		
Epididymis . . . . .	4																				
Dental . . . . .	3											2									
Antrum . . . . .	1											1									
Bartholinian . . . . .	2											1									
Serous . . . . .	1																				
Hydatid . . . . .	3				2											1					

## Operations—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1												1				Eyelid, see above. Scraped.
2	3			2	2			1				9	13			Scrotal, after radical cure of irreducible inguinal hernia 1; also removal of hæmangioma of leg 1.
	1												1			Myxo-lipoma, recurrent, 1. Erysipelas, see Special Table II.
				1								2	1			Soft fibroma 2; recurrent epulis 1.
													1			Phalanx.
												10	3			All cancellous; hallux 4; subungual 3; femur 2; scapula 1; humerus 1; radius 1; muscles of thigh 1.
												1	1			Median 1; tumour of breast 1.
													2			
													4			Same case.
												25	22			Also tonsillotomy 26; partial turbinectomy 2; Ashe's operation on septum nasi 1.
	1											1	1			Endolaryngeal removal 1; subglottic 1; readmitted for scraping 1.
													1			
				1								1				Nævo-papilloma. Skin-grafting.
													1			Excision and grafting.
				1								1				
													1			
													8			Also excision of granuloma of breast 1; two adenomata in one breast 1.
				1									1			Nephrectomy.
2	1											2	4			Pubes 1; gum 1; septum nasi 1; cheek 1; hard palate 1; scar-tissue 1; syphilitic 1; tuberculous 1. See also under Adenoma of Breast.
												3	3			Submental 2; sublingual 1; episternal 1; umbilical 1; inner canthus 1.
1				1	1			2				6	2			Nasal.
								1					1			
													1			
3								1					4			Bilateral 1.
	1															Readmission 1.
													1			
	1												2			
													1			Axilla.
	1			1								1	1			Liver. Excision 1. Fatal: mitral stenosis and atheroma.

TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.					
DIGESTIVE SYSTEM.																					
Operations for strangulated hernia—																					
Herniotomy—																					
Inguinal . . . . .		1																			
Femoral . . . . .		8																			
Herniotomy and resection—																					
Inguinal . . . . .		1															1				
Umbilical . . . . .		3																			
Herniotomy and enterostomy—																					
Umbilical . . . . .		2																			
Coeliotomy and reduction . . . . .		1																			
Herniotomy and radical cure—																					
Inguinal . . . . .		14	1					2			3					2					
Femoral . . . . .		17										1			1	1					
Umbilical . . . . .		7																			
Radical cure of hernia—																					
Inguinal . . . . .		357	24	1		18	12		55	10		115	10	2		51	4				
Femoral . . . . .		39					1		2			6	7			6					
Umbilical . . . . .		11		1								1				1					
Ventral . . . . .		15							1	1			3			6					
Operations for irreducible hernia—																					
Herniotomy . . . . .		1																			
Herniotomy and resection—																					
Inguinal . . . . .		1																			
Umbilical . . . . .		1																			
Ventral . . . . .		1																			

*Operations—continued.*

40—				50—				60—				Result.				Remarks.	
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
								1				1					Fatal: peritonitis in all. Subsequent cœliotomy, resection, and axial anastomosis 1. P.M.—General peritonitis.
1			1					1	2	1	2	2	3	1	2		Partial enterectomy for Richter's hernia.
			1		1		1						1		2		Axial anastomosis 1. Fatal: both lateral anastomosis. P.M.—Peritonitis.
			2												2		Peritonitis 1; shock 1.
					1									1			Richter's hernia (femoral). P.M.—General peritonitis.
1	2		1		2							10	2	2			Foster 9; Bassini 3; suture of canal 2. Fatal: pneumonia and phthisis 1; general peritonitis 1.
1	4				5				3	1		2	14		1		Appendicectomy 1; Roux's staple 4; suture of femoral ring 11; Battle 1; Parry 1. Fatal: general peritonitis.
	2		1		2				2				6		1		Fatal: syncope.
28	5	1		17	1				1	2		308	44	5			Bassini 124; Foster 140; Foster-Wallace 8; Bloodgood 5; Goepel 1; suture of canal 73; suture of pillars 3; ligation of sac 3. Orchidectomy 5; orchidopexy 4; abdominal reposition of testis 3; circumcision 3; excision of vaginal hydrocele 3; of funicular hydrocele 1; of varicose veins 1. Scarlet fever 2. Fatal: pulmonary thrombosis 2; ? pulmonary thrombosis 1; peritonitis 1; broncho-pneumonia 1.
2	9			1	4				1			11	28				Battle 13; Parry 5; Roux 5; plain suture or purse-string 16.
1	5			1					1				4	7			Goepel 1.
1	1			1					1				4	11			Goepel 2.
									1				1				Inguinal. Inflamed, secondary to appendicitis; subsequent appendicectomy.
										1				1			Lateral anastomosis. Peritonitis.
											1				1		Mesenteric thrombosis. Resection and lateral anastomosis. Peritonitis.
	1												1				Inflamed, ruptured, with ulceration of gut, axial anastomosis 1.

TABLE III.—*Surgical*

SURGICAL OPERATIONS.	Age.		0—				5—				10—				20—				30—			
	Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>																						
Appendicectomy in quiescent period	122						1				23	14			39	18			11	8		
„ acute stage	6	1									2				2	1						
Cœliotomy and drainage for sub-acute appendicitis	1																			1		
Appendicectomy after incision of abscess	21						2				4	3			4	3	1		2			
Incision of appendix abscess	35						5	1			6	3	1		2	3	1		4	2		
Do. and appendicectomy	20						2				3	2	1		2	4	3	1		1		
Appendicectomy and cleansing of peritoneum for local peritonitis	37						3	2	1	1	6	4	4		1	1	1	1	2	2	2	
Do. for general peritonitis	25						1		2		1		4	4	3	1	3		1			
Cœliotomy and drainage for general peritonitis due to appendicitis	4														2					1		
Drainage of peritoneum after appendicectomy	9										2	4			2	1						
Suture of perforated gastric ulcer	12											2				4	1	3				
„ duodenal ulcer	2																					
„ peptic ulcer	1																			1		
Operations on the intestines—																						
Enterotomy	1																			1		



## Operations—continued.

40—			50—			60—			Result.			Remarks.
Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		
M.	F.	F.	M.	F.	F.	M.	F.	F.	M.	F.	F.	
3	3	.....	1	1	.....				78	44	.....	Subsequent drainage of pericæcal abscess 1; of pelvic abscess 1; colostomy with subsequent closure 1; resection of appendix and cæcum for tuberculous appendicitis 1; recurrent hæmorrhage 1; removal of ovary 1. Appendicectomy also in cases of strangulated femoral hernia 1; reducible inguinal hernia 3; irreducible inguinal hernia 3; irreducible femoral 1; twisted pedicle of ovarian cyst 1; cholelithiasis 1; peritonitis of unknown origin 1.
									5	1	.....	Duration of disease: 14 hours 1; 21 hours 1; 30 hours 1; 36 hours 1; 48 hours 2. Anti-colon serum 1.
									1	.....	.....	Subsequent appendicectomy.
1	1	.....							13	7	1	Residual abscess 1. Fatal: P.M.—Actinomycosis of liver. 4
1	3	2	.....			1	.....		19	12	4	Subsequent enterolysis and appendicectomy for obstruction 1; secondary hæmorrhage 1; recurrent abscess 1; readmission for drainage of residual abscess and diffused peritonitis 1. Fatal: general peritonitis in all. Subsequent appendicectomy 15.
			1	.....					9	7	2	2 Previous pylorotomy for carcinoma 1; resection of rib and incision of parotid abscess 1; drainage of residual abscess 1. Fatal: general peritonitis in all. Endothelioma of appendix 1.
1	1	1	1	1	.....			1	13	11	10	3 Dry sponging 27; lavage 10; no drainage 3. Resuture of abdominal wall 1. Readmission for ventral hernia 1. Fatal: bronchitis 1; lobar pneumonia 1; general peritonitis 8; active phthisis 1.
	2	.....		1	.....	1	.....	1	7	1	13	4 Dry sponging 12; lavage 13. Appendicectomy at second operation 1; ileostomy 1; residual abscess 2; erysipelas, re-suture of abdominal wall 1.
	1	.....							1	.....	1	2 Incision for suppurative parotitis 1.
									4	5	.....	Interval operation 3.
			1	.....					2	6	1	3 Fatal: hæmatemesis 1; phthisis 1; peritonitis 2. Subsequent gastro-jejunostomy.
	2	.....								2	.....	Peritonitis 1; diffuse broncho-pneumonia 1.
1	.....								1	.....	.....	After suture of perforated gastric ulcer, and anterior gastro-jejunostomy.
1	.....								1	.....	.....	Swallowed foreign body, penny in small intestine.

TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
	Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>																					
Operations on the intestines— <i>cont.</i>																					
Enterolysis . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...
Resection of intestine . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
Entero-enterostomy . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Ileo-sigmoidostomy . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	1	...
Closure of faecal fistula . . . . .	3	...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	...	1	...	...	...
Ileostomy . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Appendicostomy . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...
Operations for intestinal obstruction due to—																					
Carcinoma of jejunum . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ of caecum . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ of hepatic flexure . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
„ of splenic flexure . . . . .	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
„ of descending colon . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
„ of sigmoid . . . . .	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
„ of rectum . . . . .	19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...
Intussusception . . . . .	16	6	2	1	5	...	1	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Band . . . . .	5	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Adhesions . . . . .	10	...	...	...	...	...	...	...	...	2	1	...	...	2	...	1	...	1	...	...	...
Meckel's diverticulum . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...
Volvulus . . . . .	2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...
Operations on the stomach—																					
Gastrostomy . . . . .	12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...

## Operations—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	
		1	1					1				2	2	1		After appendicectomy 1. Fatal: Carcinoma of stomach and omentum.
													1			Perforating wound of small intestine, axial anastomosis.
		1	1		1					1		3	1	1		For persistent vomiting after gastro-jejuno-stomy, anterior 4, posterior 1. Murphy's button 1.
													1	1		Ulcerative colitis. P.M.—Peritonitis in both.
										1	2					Lateral anastomosis, ascending to descending colon 1; also oophorectomy 1. Closure of ileostomy and appendicectomy 1.
					1			1				2				For perforated stercoral ulcer and general peritonitis 1; chronic peritonitis 1.
												1				Ulcerative colitis.
		1								1						Lateral anastomosis.
												2				Ileo-colostomy by lateral anastomosis.
										1				1		Ileostomy.
												1				Transverse colostomy, subsequent resection and anastomosis.
												2				Transverse colostomy 1; lateral anastomosis 1, transverse to descending colon. Subsequent resection 1.
					2			1				1	3			Left inguinal colostomy 2; cæcostomy 1; right inguinal colostomy 1. Oophorectomy 1.
4	1	3			2	5	2					8	8			Left inguinal colostomy in all; after transsacral excision of rectum 1. In two stages 10. Erysipelas 2. See Special Table II.
												6	4	1	5	Ileo-cæcal 4; ileo-colic 1; enteric-ileo-colic 3; enteric ileo-cæcal 3; cæcal-ileo-cæcal 3; colic-colic 1; ileo-colic-colic 1. Reduced before cæliotomy 2. Appendicectomy 2; resection and artificial anus with two Paul's tubes 1.
					1		1		2		1	1	3			Broad ligament 1; removal of tube and ovary.
1									2		6	1	8			Enterolysis 7; appendicectomy 1; transverse colostomy 1; cæcostomy 1; ileostomy 1.
	1									1		1		1		Amputation 2; resection and axial anastomosis 1; enterolysis 1.
1												1	1			Cæcum 1, reposition. Sigmoid 1; after sigmoido-sigmoidostomy, resection. Also resection of rib 1.
1		6		1		1		2		7	1	4				Kader-Senn 11; Frank 1.

TABLE III.—*Surgi*

SURGICAL OPERATIONS.	Age.	0—			5—			10—			20—			30—			
		Total.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.	Dischd.	Died.			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
DIGESTIVE SYSTEM—continued.																	
Operations on the stomach—cont.																	
Gastro-jejunostomy . . .	37												3		1	7	3
Finney's operation . . .	1																
Gastrolisis . . .	3												2			1	
Plastic on gastro-jejunostomy . . .	1															1	
Operations on the bile passages—																	
Cholecystotomy . . .	2																1
Cholecystostomy . . .	20											1	1				3
Cholecystectomy . . .	4												1				
Choledochotomy . . .	6																3
Cholecystenterostomy . . .	2																
For biliary fistula . . .	3																1
Pericholecystitis . . .	1																
Cæliotomy for tuberculous peritonitis . . .	2	1						1									
Cæliotomy for cirrhosis . . .	3															1	
Exploratory cæliotomy . . .	28				1			1	1	1		2	4	1		3	2
Cæliotomy for peritonitis . . .	6							1									

## Operations—continued.

50—												60—												Result.				Remarks.				
Dischd.				Died.				Dischd.				Died.				Dischd.				Died.				Dischd.					Died.			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		M.	F.		
3	3	2	1	7	1									1		17	10	6	4											Anterior 24; posterior 13. Subsequent posterior gastro-jejunostomy and double jejuno-jejunostomy 1; carcinoma 12; chronic gastric ulcer 13; pyloric stenosis 5; hour-glass stomach 1; after suture of perforated gastric ulcer 1; chronic duodenal ulcer 2; gastropnoxis 1; vertebral growth 1; ruptured duodenum 1. Subsequent jejuno-jejunostomy 4; pylorotomy and appendectomy 1.		
1																1														Pyloric stenosis after hydrochloric acid poisoning.		
																1	2													Previous gastro-jejunostomy 1.		

TABLE III.—*Surgic*

SURGICAL OPERATIONS.	Age.	0—		5—		10—		20—		30—	
		Dischd.		Dischd.		Dischd.		Dischd.		Dischd.	
		Total.	Died.	Total.	Died.	Total.	Died.	Total.	Died.	Total.	Died.
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>DIGESTIVE SYSTEM—continued.</b>											
Cœliotomy for volvulus of omentum	1										
Re-suture of abdominal wall	8					3					
Excision of tongue and glands	1										
Partial excision of tongue	2										
Removal of salivary calculus	1									1	
Cauterisation of tongue	1										
Plastic on faecal fistula	4										1
Scraping for ulcerative stomatitis	1			1							
For prolapse of rectum	8							1		1	
For deformity of anus	1			1							
Anorrhaphy	1										
Excision of rectal stricture	1					1					
Fistula <i>in ano</i>	29	1						4		8	1
Fissure <i>in ano</i>	10					1		2	2	2	
Hæmorrhoids, Whitehead	17							2	3	6	2
„ partial Whitehead	26							2	4	6	4
„ ligation and excision	12							3	1	1	5
„ strangulated, reposi- tion	2									2	
Drainage of tonsillar abscess	3			2		1					
„ of parotid abscess	3					1		1			
„ of hepatic abscess	3									1	
„ of subphrenic abscess	3									1	
„ of subhepatic abscess	2									1	
„ of perisplenic abscess	1			1							
„ of pelvic abscess	3					1	1				
„ of abdominal abscess	5			1				1	1	1	
<b>GENITO-URINARY SYSTEM.</b>											
Circumcision	13	1		4		3		2		1	
Excision of urethral caruncle	8							2			
Hydrostatic dilatation of bladder	1							1			
Cock's puncture	2										
Cystoscopy	12					2		3	1		2
External urethrotomy	5							1			
Internal urethrotomy	16							1		6	
Suture of ruptured urethra	1										

## perations—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1										1						Removal of twisted omentum.
										3						Two operations on one case.
				1						1						Intra-buccal; chronic glossitis.
1				1						2						Simple ulcer 1; tuberculous ulceration of frenum 1.
																Syme with preliminary laryngotomy.
										1						In Wharton's duct.
	1											1				Leukoplakia.
3										3	1					
										1						
				1						1	2					
										1						Division of band.
				1						1						After complete Whitehead.
										1						Tuberculous; para-sacral route; subsequent colostomy in two stages.
11				4						28	1					
1	1			1						6	5					
4										12	6					Also excision of lipoma 1.
2	4			3				1		14	12					
1	1									5	7					
										2						
										2	1					
				1						1	2					After appendix abscess 1; resection and anastomosis for strangulated umbilical hernia 1. Bilateral with tracheotomy 1.
1	1									2		1				Dysenteric 1.
1										2		1				
1										2						
												1				
										1	1		1			After drainage of appendix abscess 1; after interval appendicectomy 1; due to carcinoma of ovary 1, fatal.
	1									2	2	1				Pneumococcal 1. After appendicectomy 2.
2										13						
1										8						
										1						Tuberculous cystitis.
						1				1		1				Fatal: extravasation before operation.
1				3						9	3					With segregation by Luy's instrument in 6 cases.
1	1			1		1				3		2				Wheelhouse 1; removal of calculus 1. Fatal: for extravasation in both cases.
4	1			2				1		1		14		2		Fatal: infective endocarditis 1; arteriosclerosis 1.
1												1				Removal of impacted calculus 1.

TABLE III.—*Surgic*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
		Total.																			
		M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
GENITO-URINARY SYSTEM — <i>continued.</i>																					
Dilatation of urethral stricture	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Incision of periurethral abscess	10	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
„ for extravasation	4	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Suprapubic cystostomy	19	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Litholapaxy	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Enucleation of prostatic adenoma	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Do., with urethra	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nephropexy	21	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Lumbar nephrotomy	12	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
„ nephrectomy	7	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Nephrolithotomy	8	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Exploration of kidney	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Incision of perinephric abscess	1	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Examination of bladder with sounds	7	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orchidopexy	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Abdominal reposition of testis	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Orchidectomy	11	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Epididymectomy	6	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Incision and scraping for tuberculous epididymitis	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Tapping of hydrocele	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Radical cure of hydrocele	36	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Excision of hæmatocele	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Suture of wound of scrotum	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Extraction of bullet from scrotum	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Removal of ovarian cysts	9	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Oophorectomy	1	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Myomectomy	2	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....



*Operations*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
8				7						21						Prevesical, two operations on one case. Carcinoma of bladder 2; of rectum 1; enlarged prostate 5; calculus 7; cystitis 1; tuberculous cystitis 1; hæmaturia 3.
6				1						10						
									1	3		1				
				3				3	1	6		12	1	6		
												1				
				2				3		3		5		3		Fatal: pyelonephritis 2; hæmorrhage 1.
				2				2		2		4		2		Fatal: cystitis 1; broncho-pneumonia 1.
4				3								21				Exploratory nephrotomy 2.
				1								10	2			Suppression of urine 1; tuberculous kidney 1; hydronephrosis 2; pyonephrosis 2; renal bilharziosis 1; cystitis 2; nephralgia 1; hæmaturia 2; erysipelas after operation 1.
1	1			1				1				1	6			Hydronephrosis 3; pyonephrosis 1; tuberculous kidney 1; chronic interstitial nephritis with hæmaturia 1; partial 1, for sinus after nephrolithotomy.
				1	1							7	1			
												1				Hæmaturia.
												1				
1												6	1			
												9				See also under Radical Cure of Inguinal Hernia.
												2				See also under Radical Cure of Inguinal Hernia.
2										1		10		1		See also under Radical Cure of Inguinal Hernia.
																Undescended testis 2; tuberculous 7; orchitis 1.
												6				Fatal: hæmatocoele, cystitis, and pyelonephritis.
																Tuberculous epididymitis in all.
1												2				
												1				
6				4								36				Bilateral 8; excision of parietal layer 31; Indian operation 4; extroversion of testis 1. Also excision of hydrocele of cord 1; suture of canal 1.
																See also Radical Cure of Inguinal Hernia.
				1								2				
												2				
												1				
				1		1		2					8		1	Bilateral 1; twisted pedicle 3; teratoma 1; intra-ligamentous 2. Fatal: syncope. Appendix also removed 1.
																Inoperable carcinoma of breast.
													1			
													2			

TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.					
																		M.	F.	M.	F.
GENITO-URINARY SYSTEM — continued.																					
Removal of uterine appendages . . . . .	7												1		1		4				
Curetting . . . . .	2														1		1				
Excision of chronic mastitis . . . . .	8												1				3				
Incision of prepuce . . . . .	2																2				
VASCULAR SYSTEM.																					
Ligation of axillary artery . . . . .	1																				
„ of superficial femoral . . . . .	2																1				
„ of external iliac . . . . .	1																1				
„ of internal saphenous vein . . . . .	1																1				
„ of internal jugular vein . . . . .	4									2				1			1				
Incision of hæmatoma . . . . .	6								2								1				
Attempted ligation of internal jugular vein . . . . .	1																	1			
Excision of varicose veins . . . . .	170								19	2			53	46			17	15			
„ of varicocele . . . . .	99								52				44				3				
Incision and drainage of pericardium . . . . .	2					1			1												
LYMPHATIC SYSTEM.																					
Excision of tuberculous glands . . . . .	65	4	2			4	4			8	11			7	19		1	2			
Scraping of tuberculous glands . . . . .	19					3	3			1	3			2	2		1	3			
Excision of simple glands . . . . .	10					2							3	1			2				
Incision of suppurating glands . . . . .	8		1			1	2			2							1				
Excision of lymphadenomatous glands . . . . .	5												3								
THYROID GLAND.																					
Enucleation of adenoma . . . . .	12												2	3			4				
Partial thyroidectomy . . . . .	12								1	3	1	1		1	1	1	1				
Incision of cyst of thyroid . . . . .	1																				
OSSEOUS SYSTEM.																					
Incision for acute necrosis of—																					
Femur . . . . .	8								3			5									
Tibia . . . . .	3					1				2											

*Operations*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	...	...	...	5	...	2	Ruptured tubal gestation 4; salpingo-oophoritis 1; also appendicectomy 1. Fatal: salpingitis and general peritonitis.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	Septic endometritis. Fatal: pyæmia.
...	4	...	...	...	...	...	...	...	...	...	...	...	8	...	...	Bilateral 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	
...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	With branches for aneurysm of axillary and sub-scapular arteries.
...	...	1	...	...	...	...	...	...	...	...	...	...	1	1	...	In Hunter's canal 1; at apex of Scarpa's triangle 1. Fatal: septicæmia from septic ulcers on leg. Both for popliteal aneurysm.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	Transperitoneal, for aneurysm of common femoral.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	For infective thrombosis.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	3	...	Mastoiditis. Fatal: temporo-sphenoidal abscess 1; suppurative meningitis 1.
2	...	...	...	...	...	...	...	1	...	...	...	...	5	1	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	Death under anæsthetic; mastoiditis with lateral sinus thrombosis.
7	6	...	...	2	2	...	...	1	...	...	...	99	71	...	...	Scarlet fever 1; recurrent hæmorrhage 1.
...	...	...	...	...	...	...	...	...	...	...	...	99	...	...	...	Ligation of vessels for recurrent hæmorrhage 3.
...	...	...	...	...	...	...	...	...	...	...	...	1	1	...	...	Resection of costal cartilage, seventh 1; sixth and seventh 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
1	1	...	...	1	...	...	...	...	...	...	...	26	39	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	...	7	12	...	
...	1	...	...	...	...	...	...	1	...	...	...	...	8	2	...	? Syphilitic 1.
...	...	...	...	1	...	...	...	...	...	...	...	...	5	3	...	
...	1	...	...	...	...	...	...	1	...	...	...	...	3	2	...	For microscopy 1.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	1	...	...	1	1	...	...	...	...	...	...	...	8	9	...	
...	...	...	...	...	2	...	...	...	...	...	...	...	1	7	2	Fatal: suppurative mediastinitis 1; septic broncho-pneumonia 1; pyæmia 1; exophthalmic goitre 1, death from acute thyrodism.
...	...	...	...	1	...	...	...	...	...	...	...	...	1	...	...	Inflamed.
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	3	...	5	...	Fatal: same case, five operations.
...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	

TABLE III.—*Surgi*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
OSSEOUS SYSTEM—continued.																					
Incision for acute epiphysitis	5	3	1	1																	
„ for acute periostitis	3						1								1						
„ for osteitis	1																				
Gouging for osteomyelitis	4					1			1	1				1							
Scraping for epiphysitis	3		1							2											
„ for osteitis	2								1					1							
„ for caries of—																					
Mastoid process.	1								1												
Malar bone	1													1							
Maxilla	1													1							
Sternum	3																	1			
Ribs	7					1			1					2				1			
Os innominatum	8					2			2					2							
Humerus	2													1					1		
Ulna	1	1																			
Tibia	1								1												
Tarsus	3					1				1				1							
Os calcis	1								1												
Removal of necrosed bone from—																					
Maxilla	2																		1		
Mandible	7									2	1		3	1							
Rib	1									1											
Humerus	2					1			1												
Ulna	4									1			1					2			
Phalanx of hand	2																		1	1	
Femur	11		1						3	1			1	1				1			
Tibia	19					6				5	2							5			
Fibula	2																1				
Metatarsus	1													1							
Incision for necrosis	7								5					1					1		
Removal of tibial tubercle	2								1					1							
ARTICULAR SYSTEM.																					
Elbow—Excision	6													4							
Arthrectomy	1													1							
Drainage of periarticular abscess	7	1								1	1			3					1		
Exploratory incision	1															1					
Sacro-iliac—Arthrotomy	3				1																
Hip—Excision of femoral head	5		1			2				1									1		
Arthrectomy	4					3				1											



TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—		5—		10—		20—		30—	
		Dischd.		Died.		Dischd.		Dischd.		Dischd.	
	Total.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>ARTICULAR SYSTEM—continued.</b>											
<i>Hip (cont.)—Erasion</i> . . . . .	1						1				
Incision of periarticular abscess and sinus	33	1			5	4	11	10	1		1
<i>Knee—Excision</i> . . . . .	12				2	1	1	1	1	2	2
Arthrectomy . . . . .	4	1			2				1		
Erasion . . . . .	1				1						
Arthrotomy . . . . .	10		2				1	2	4		
Incision of periarticular abscess and sinus	13	1	1		4	2		1		1	2
Incision for septic arthritis	1							1			
<i>Ankle—Arthrotomy</i> . . . . .	1				1						
Excision of semilunar cartilage	8						1		3		5
Incision and reduction of displaced semilunar cartilage	1										
Removal of loose body from knee	5								4		1
<i>Acromio-clavicular joint—Excision</i>	1										
Incision of peri-articular abscess of shoulder	1								1		
<b>LOCOMOTOR SYSTEM.</b>											
Excision of burseæ . . . . .	11						1		2	6	
Incision of chronic burseæ . . . . .	3						1				
„ for acute bursitis . . . . .	15				1		1	1	3	2	1
Excision of tenosynovitis . . . . .	6	1					1		1		1
Amputation for disease—											
<i>Hip</i> . . . . .	2				1				1		
<i>Thigh</i> . . . . .	17				1	1		1	2	1	1
 <i>Leg</i> . . . . .	8								1		2
 <i>Syme Interscapulo-thoracic amputation</i>	1										1
<i>Forearm</i> . . . . .	3				1				1		1
<i>Fingers</i> . . . . .	1										1

## operations—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
												1				
												18	15			All tuberculous.
												6	6			Tuberculous 10; ankylosis 2.
												3	1			
												1				
1												6	4			Tuberculous 2; septic arthritis 5, secondary to osteomyelitis; acute 2; chronic 1; after excision of semilunar cartilage 2 operations on same case. For hæmorrhage after excision of cartilage 1.
												7	6			Tuberculous in all.
														1		Pus not reached. Pyæmia.
												1				
												8				Septic arthritis; hæmarthrosis 1.
	1												1			
												4	1			
					1								1			
													1			
1					1							3	8			Prepatellar 5; gluteal 3; deltoid 1; semimembranosus 1; biceps cruris 1; tuberculous 1.
1									1			2	1			Tuberculous 1.
	2											6	9			All prepatellar. Erysipelas 3.
	1				1							3	3			
												2				Tuberculous hip; Furneaux-Jordan in two stages.
					3		1		1	1	1	8	6	2	1	Moist gangrene 2; dry gangrene 1; acute osteomyelitis of femur 1; of tibia 1; necrosis of femur 1; tuberculous knee 8; gummatous osteitis of femur 1; septic arthritis of knee 1. Also for sarcoma 2, see under Sarcoma of Femur.
1					2				1		1	6	1	1		Tuberculous calcaneitis 1; tuberculous ankle 1; necrosis of tarsus 2; moist gangrene 2. After Syme's amputation 1; callous ulcer 1.
												1				Cellulitis of foot.
																2, see under Recurrent Sarcoma of Brachial Plexus, and of Humerus.
												2	1			Moist gangrene 1; tuberculous carpus 1; necrosis of radius and ulna 1.
												1				Traumatic gangrene.

TABLE III.—*Surg*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.				
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.					
LOCOMOTOR SYSTEM—continued.																					
Amputation for deformity—																					
Thigh . . . . .		1								1											
Pirogoff . . . . .		1								1											
Chopart . . . . .		1								1											
Toes . . . . .		4		1						1			1								
Fingers . . . . .		2								1			1								
Amputation for injury—																					
Thigh . . . . .		5		1													2				
Leg . . . . .		2																			
Toes . . . . .		1																			
Arm . . . . .		1															1				
Forearm . . . . .		2											1				1				
Fingers . . . . .		4											2				2				
Wiring of—																					
Patella . . . . .		23											1	2			5	3			
Femur . . . . .		2															2				
Ulna . . . . .		1											1								
Olecranon . . . . .		1															1				
Tibia and fibula . . . . .		1																			
Suture of patella with silk . . . . .		1																1			
Screwing of—																					
Femur . . . . .		1																			
Fibula . . . . .		1											1								
Pegging of great tuberosity . . . . .		1																			
Bone-grafting . . . . .		1				1															
Reduction of dislocations—																					
Humerus . . . . .																					
Hip . . . . .		2		1																	
Sub-astragaloid . . . . .		1											1								
Metatarso-tarsal . . . . .		1								1											
Metacarpo-phalangeal of thumb . . . . .		1								1											
Subluxation of atlas . . . . .		1								1											
Cleaning and suture for compound fracture of—																					
Vault . . . . .		5													1	1		1			
Humerus . . . . .		1				1															
Radius and ulna . . . . .		2								1								1			
Colles's fracture . . . . .		1													1						





TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—				5—				10—				20—				30—			
		Total.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	Dischd.		Died.	
			M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		M.	F.		
<b>LOCOMOTOR SYSTEM—continued.</b>																					
Cleaning and suture for compound fracture of ( <i>cont.</i> )—																					
Femur . . . . .	2									1											
Tibia and fibula . . . . .	10																	4			
Tibia . . . . .	2																	1			
Fibula . . . . .	1									1											
Pott's fracture . . . . .	1														1						
Cleaning of wounds of knee-joint . . . . .	2									1								1			
Suture of tendons . . . . .	6														1	2		2	1		
<b>NERVOUS SYSTEM.</b>																					
Removal of portion of skull . . . . .	6				1					1				2							
Neurexarrhesis . . . . .	2													1					1		
Facio-hypoglossal anastomosis . . . . .	1																	1			
Suture of brachial plexus . . . . .	1	1																			
Neurolysis . . . . .	1									1											
Drainage of cerebral abscess . . . . .	1				1																
Exploration of brain and drainage of lateral ventricle . . . . .	2				1												1				
Excision of roots of fifth nerve . . . . .	1															1					
Supra-orbital neurotomy . . . . .	1																				
Laminectomy . . . . .	4					1		1	1	1											
Neurectomy . . . . .	1																	1			
Suture of nerves . . . . .	5									1				4							
<b>RESPIRATORY SYSTEM.</b>																					
Exploratory aspiration of pleura . . . . .	1							1													
Resection of rib . . . . .	28	2	1	2		5	3			4		1		3	2	2		1	1	1	
Drainage of empyema . . . . .	1									1											
Thoracoplasty . . . . .	2					1									1						
Exploration of lung . . . . .	1														1						
Tracheotomy . . . . .	17	1			2	1	2	1	1					1		1			2	1	
Laryngotomy . . . . .	5																	1			

operations—continued.

50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
1		2		2				9	1			
								2				
								1				
									1			
								2				
								3	3			
1								3	2	1		Focal epilepsy 2; intra-cranial tumour 3, 2 operations on one case. Fatal: tuberculous meningitis.
								1	1			Sciatic.
								1				Also hypoglossal-lingual anastomosis.
								1				Erb's paralysis.
								1				Musculo-spiral.
									1			After punctured fracture of vault; meningitis.
								1	1			Hydrocephalus 1; pyocephalus 1. Antrotomy 1.
								1				Hartley-Krause route. Ophthalmic division not divided; Gasserian ganglion not removed.
		1						1				Frontal sinus also explored.
								1	2	1		Two operations on one case, fatal, from broncho-pneumonia. All for caries with paraplegia.
								1				Inferior dental for inoperable recurrent carcinoma of lip.
								4	1			Median and ulna 1; median 3; ulna 1. Tendons also sutured in all.
									1			Death under anæsthetic; generalised tuberculosis.
								15	7	6		Pyopneumothorax 1; abscess of lung 1; exploration of subdiaphragmatic space 1; foreign body in lung 1; the rest for empyema. Fatal: abscess of lung 1; purulent pericarditis 1.
								1				Old empyema.
								1	1			For foreign body.
								5	5	4	3	Diphtheria 7; cellulitis of neck and dyspnoea 4; syphilitic laryngitis 3; carcinoma of larynx 1; foreign body in larynx 1; preliminary to excision of tongue 1. Fatal: diphtheria 4; death under anæsthetic (cellulitis) 2; septic broncho-pneumonia 1.
		2	1					4	1			Cut throat 3; preliminary to excision of tongue 2. Fatal: cut throat; œdema of lungs.

TABLE III.—*Surgic*

SURGICAL OPERATIONS.	Age.		0—				5—				10—				20—				30—			
	Total.	Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.		Dischd.	Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
<b>RESPIRATORY SYSTEM—continued.</b>																						
Laryngectomy . . . . .	2																				1	1
Exploration of maxillary antrum . . . . .	15				1				1	3			2	6								
Drainage of maxillary antrum . . . . .	2												2									
" of frontal sinus . . . . .	33								3	5			2	12					1	2		
Turbineotomy . . . . .	1									1												
Curettage of ethmoidal cells . . . . .	12				1	1			3	3			2						1			
Straightening nasal septum . . . . .	7												4							1		
Removal of nasal polypi . . . . .	1				1																	
Subcutaneous injection of paraffin . . . . .																						
<b>AUDITORY SYSTEM.</b>																						
Mastoid antrotomy . . . . .	36	3			8	3			7	2	3		3	2	1							
Complete mastoid operation . . . . .	105	1	2		7	13			22	21			8	14					6	6		
Mastoid grafting . . . . .	99		2		4	10			25	21			9	13					5	4		
Incision of mastoid abscess . . . . .	4	2											1							1		
Paracentesis tympani . . . . .	1								1													
Curetting tympanum . . . . .	4								2	1												
Removal of sequestrum . . . . .	1				1																	
" of plug from lateral sinus . . . . .	1				1																	
Snaring of aural polypi . . . . .	1																					
Closure of post-aural opening . . . . .	11								5	3			1	1								
Antrotomy and drainage of extra- dural abscess . . . . .	1																					
Antrotomy and drainage of cere- bellar abscess . . . . .	1					1																
Antrotomy and exploration of brain . . . . .	2					1	1															
Drainage of temporo-sphenoidal abscess after antrotomy . . . . .	3								1			1			1							
Removal of clot and plugging of lateral sinus . . . . .	2											1				1						
Plastic on meatus . . . . .	1												1									
<b>DEFORMITIES.</b>																						
Osteotomy of femur—																						
Neck . . . . .	2					1			1													
Intertrochanteric . . . . .	1																				1	
Subtrochanteric . . . . .	2								2													
Supra-condylar . . . . .	13	2							6	3			2									



TABLE III.—*Surgical.*

SURGICAL OPERATIONS.	Age.	0—		5—				10—		20—				30—									
		Total.	Dischd.		Died.		Total.	Dischd.		Died.		Total.	Dischd.		Died.		Total.	Dischd.		Died.			
			M.	F.	M.	F.		M.	F.	M.	F.		M.	F.	M.	F.		M.	F.	M.	F.	M.	F.
<b>DEFORMITIES—continued.</b>																							
Cuneiform osteotomy of knee	4								2	1			1										
Osteotomy of tibia	7	2	1			2				2													
"    of fibula	1																		1				
"    of tibia and fibula	2								2														
"    of metatarsal bone	1											1											
Resection of portion of humerus	1					1																	
"    "    of femur	1					1																	
"    "    of tibia	1																		1				
Open reduction of old fracture	2								2														
Excision of head of radius	1																						
Fasciotomy	1																		1				
Fasciectomy	6	1																					
Tenotomy for talipes	26	3	7			5	2		2	7													
"    for pes cavus	2									1			1										
"    of adductor longus	2						2																
Myotomy for torticollis	2					1			1														
Tenotomy for torticollis	1					1																	
Tendon transplantation	3					1			1	1													
Lengthening of tendo Achilles	1								1														
Partial astragalectomy	1					1																	
Buchanan's operation	2		2																				
Ogston's operation	2		2																				
Plastic operations for contraction after burns	9		3			1			1				4										
Plastic for contracted finger	1												1										
Esmarch's operation	1					1																	
Tenolysis	3								1	2													
Arthrodesis for infantile paralysis	2					2																	
"    for talipes varus	1					1																	
For hammer-toe	20								4	6			8	2									
For hallux rigidus	3								1				2										
For hallux valgus	7								1				1	2					2				
Avulsion of nail	4								2				1						1				
Plastic of face	2																						
<b>MALFORMATIONS.</b>																							
Suture of harelip	25	10	13			1			1														
Removal of os incisivum	1	1																					
Suture of cleft palate	19	4	7	1		4	3																
Excision of thyroglossal fistulae	2												1						1				
Imperforate anus	3			2	1																		
Plastic for ectopia vesicæ	7	2							5														
"    for hypospadias	1	1																					

operations—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	F.	
													2	2	...	Genu flexum after excision for tubercle.
													4	3	...	Cuneiform 4; Achillotenotomy 1.
													1	...	...	For deformity after Pott's fracture.
													2	...	...	
													1	...	...	First metatarsal, for traumatic pes cavus; wired.
													1	...	...	Supra-condylar fracture.
													1	...	...	Separated lower epiphysis.
													1	...	...	Malunited fracture of tibia and fibula.
													2	...	...	Supra-condylar fracture of humerus 1; separation of lower epiphysis 1.
													1	...	...	Old fracture.
													1	...	...	Dupuytren's contraction.
				1	...			1	...				6	...	...	Dupuytren's contraction 5; cicatricial contraction after burn.
													10	16	...	Also fasciotomy 6.
													1	1	...	Fasciotomy 1.
													2	...	...	Tuberculous hip 1; congenital displacement of hip 1.
													2	...	...	
													1	...	...	Subcutaneous.
													1	2	...	Paralytic calcaneus 1; calcaneo-valgus 1; equinus 1.
													1	...	...	Paralytic talipes equino-varus.
													1	...	...	Paralytic talipes equino-varus.
													2	...	...	Same case.
													2	...	...	Same case.
													1	8	...	Mouth 1; lower lip 2; arm 1; axilla 2; arm and leg 2; neck 1.
													1	...	...	
													1	...	...	Ankylosis of jaw after cancrum oris.
													1	2	...	
													2	...	...	Same case, knee and ankle fixed.
													1	...	...	Paralytic.
													12	8	...	Tenotomy of extensor longus tendons 1. Resection of bone in all.
													3	...	...	Resection of bone.
													3	4	...	Resection of bone.
													3	1	...	Ingrowing toe-nail.
													2	...	...	Same case, for deformity after excision of endothelioma.
													11	14	...	
													1	...	...	
													8	10	1	Fatal: shock.
													2	...	...	
													2	1	...	Left iliac colostomy 2; perineal colostomy 1.
													7	...	...	Five operations on one case.
													1	...	...	

TABLE III.—*Surg*

SURGICAL OPERATIONS.	Age.	0—		5—		10—		20—		30—			
		Total.	Dischd.		Died.		Dischd.		Died.		Dischd.		
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.
<b>MALFORMATIONS—continued.</b>													
Excision of sacral meningocele . . . . .	1	1											
Malformation of ear . . . . .	1							1					
<b>MISCELLANEOUS.</b>													
Elevation of depressed fracture . . . . .	5					1		1		1			
Exploration of skull . . . . .	2		1										
"    of brain . . . . .	1						1						
Suture of wounds of scalp . . . . .	18					2	1	1		1		3	2
"    "    of face and mouth . . . . .	2					1							
"    "    of extremities . . . . .	21					2		7		7		2	1
"    of cut throat . . . . .	10							1				3	2
Removal of wire . . . . .	14							2	1	1	2	4	2
"    of filigree . . . . .	4												
"    of staple . . . . .	1												
"    of needle . . . . .	5							1	1	2			
"    of foreign body from oesophagus . . . . .	3	1	2										
"    of foreign body from larynx . . . . .	2		2										
"    of iron nut from penis . . . . .	1												
"    of foreign body from ex- ternal auditory meatus . . . . .	1		1										
"    of pellets from leg . . . . .	1												
Thiersch grafting . . . . .	28	7	4			2		1		1	1	1	2
Cleansing burn under anæsthetic . . . . .	1		1										
Removal of bullet from scalp . . . . .	1												
Suture of wounds of labia . . . . .	2			1		1							
Irrigation of psoas abscess . . . . .	19					1		1	3		2	1	5
"    of gluteal abscess . . . . .	3							2					
"    of iliac abscess . . . . .	2					2							
"    of lumbar abscess . . . . .	1							1					
"    of cervical abscess . . . . .	1								1				
Stretching of psoas for contraction . . . . .	1								1				
Exploratory incision . . . . .	11							1	2		2		2
Excision of lupus . . . . .	4	1						3					
Scraping of lupus . . . . .	2												
Excision of scrofuloderma . . . . .	1												1
Incision and scraping of carbuncle . . . . .	13												1
"    "    of furuncles . . . . .	1									1			
Scraping of cancrum oris . . . . .	2												
"    of ulcer . . . . .	5								1		2		1



*operations*—continued.

40—				50—				60—				Result.				Remarks.
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Exploratory incision.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
...	...	...	...	...	1	...	...	...	...	...	...	2	2	1	...	Trephined 3; reposition of fragments 1. Fatal: subdural hæmorrhage.
...	...	...	...	...	...	...	1	...	...	...	...	...	1	...	1	Fissured fracture with laceration of brain in fatal case.
4	...	...	...	2	1	...	...	1	...	...	...	12	6	...	...	1 After trephining for depressed fracture; meningitis. Compound fissured fracture of vault 1.
2	...	...	...	1	...	...	...	...	...	...	...	2	...	...	...	Bullet wounds 3; ligation of external circumflex artery 1.
...	...	...	...	...	...	...	...	...	...	...	...	20	1	...	...	
1	...	...	...	1	...	1	...	1	...	...	...	7	2	1	...	Laryngotomy 3.
1	...	...	...	1	...	...	...	...	...	...	...	9	5	...	...	Abdominal 2; inguinal 2.
2	1	...	...	1	...	...	...	...	...	...	...	3	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	After Roux's operation for femoral hernia.
...	1	...	...	...	...	...	...	...	...	...	...	3	2	...	...	Coins.
...	...	...	...	...	...	...	...	...	...	...	...	1	2	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	Metal "regulator" 1; fishbone 1.
...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	Amputation of breast 5; ulcer 6; excision of papilloma 2; celiotomy wound 1; burns 13.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Erysipelas.
...	4	...	...	1	1	...	...	3	...	...	...	11	17	...	...	Fatal: fractured pelvis.
...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	
...	...	...	...	...	...	...	...	1	...	...	...	...	1	...	...	Bilateral 1. Fatal: toxæmia.
3	...	...	...	...	...	...	...	...	...	...	...	12	6	1	...	Fatal: nephritis.
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	After drainage of psoas abscess.
...	...	...	...	...	...	...	...	...	...	...	...	2	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	Fatal: aspiration pneumonia.
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	
1	2	...	...	4	...	...	...	4	1	...	...	10	3	...	...	Fatal: aspiration pneumonia.
...	1	...	1	...	...	...	...	...	...	...	...	...	1	...	...	
...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	1	Fatal: aspiration pneumonia.
...	1	...	...	...	...	...	...	...	...	...	...	2	3	...	...	

TABLE III.—*Surgi*

SURGICAL OPERATIONS.	Age.		0—				5—				10—				20—				30—			
	Total.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.	
			M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
MISCELLANEOUS— <i>continued.</i>																						
Incision of acute abscess . . . . .	122		6	1	...	1	7	3	...	...	11	8	1	...	13	20	1	...	10	10	...	...
Excision of scar . . . . .	1		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Removal of pectoral muscle . . . . .	1		...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cauterisation for secondary hæ- morrhage . . . . .	1		...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...
Scraping of sinuses . . . . .	16		...	...	...	...	1	...	...	...	3	1	...	...	3	1	...	...	...	...	3	...
Incision of chronic abscess . . . . .	10		...	1	...	...	1	1	...	...	2	...	...	...	4	1	...	...	...	...	...	...
„ of tuberculous abscess of inguinal canal . . . . .	1		...	...	...	...	...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...
„ of cellulitis . . . . .	105		...	1	1	...	8	1	...	...	4	5	...	...	12	10	...	...	22	8	...	...
Total . . . . .	3625																					

perations—continued.

40—				50—				60—				Result.				Remarks.	
Dischd.		Died.		Dischd.		Died.		Dischd.		Died.		Dischd.		Died.			
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.		
13	8	...	...	6	...	1	...	1	1	...	...	67	51	8	1	Fatal: pyæmia. Erysipelas 1, see Special Table II.	
...	1	...	...	...	...	...	...	...	...	1	...	...	1	...	...	Supposed recurrent mammary carcinoma.	
...	...	...	...	...	...	...	...	...	...	1	...	...	1	...	...	Supposed recurrent mammary carcinoma; ligation of axillary artery.	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	After amputation of thumb.	
2	2	...	...	...	...	...	...	...	...	...	...	8	8	...	...	Urinary 2.	
...	...	...	...	...	...	...	...	...	...	...	...	7	3	...	...	...	
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	After radical cure of hernia with tuberculous peritonitis.	
11	4	1	...	6	5	1	...	4	1	...	...	67	35	3	...	Cellulo-cutaneous erysipelas in 25; tracheotomy 1.	
												2048	1333	155	89	Fatal: diabetes 1; septicæmia 1; erysipelas 1.	
												3625					

## SUMMARY OF DISEASES.

---

### GENERAL DISEASES.

*Erysipelas* (admitted with the disease).—Males 32; females 27. Died 5. Re-admissions 3.

*Situation*.—Upper extremity 7; lower extremity 21; trunk 2; face 28; scalp 1.

*Mode of entrance of organisms*.—Suppurating wound 10; ulcer 1; bursitis 3; rhinitis 1; whitlow 2; amputation of breast 1; lupus 1; scald 1; recurrent attacks 9; not ascertained 30.

*Treatment*.—Incisions 12; hot lotions 1; powders 35; ointments 1; anti-streptococcus (*erysipelas*) serum 10.

*Cellulo-cutaneous erysipelas; pyæmia; recovery*.—E. A. R—, male, æt. 40, milk-carrier. Patient was admitted on December 20th, 1904, with a typical erysipelatous eruption over right side of chest and back. Delirium was present on admission, and temperature was 103°. Temperature remained high, and on the eighth day a collection of pus over the middle ribs was incised and drained. The rash faded on sixth day, and desquamation followed rapidly. Temperature on ninth day fell to 99°, but fever remained continuous, and at night temperature was usually 102°. No further eruption of erysipelas was observed, but on January 2nd the temperature reached 103°, and from this time the onset of pyæmia was dated. Abscesses were opened over right wrist and left forearm on January 9th and 12th, and abscesses in legs were incised on the 14th and 16th. Blood-culture on 17th yielded pure culture of *Staphylococcus albus* with very extensive growth. A culture from an abscess yielded pure growth of *Streptococcus pyogenes*. On January 19th 20 c.c. of antistreptococcus serum was given, and the same dose repeated on the two subsequent days. Temperature on the evening of the 20th reached 103°, but on the morning of the 21st had fallen to 98° and remained normal for 48 hours, reaching 101.6° on January 23rd. The following day another 20 c.c. of serum was administered, and the same dose repeated on three subsequent days. On January 30th a large abscess in right calf was opened, and the improvement was not maintained. Temperature again assumed the pyæmic type, reaching 102° at night. Further incisions were required during the next ten days, and temporary effusions into joints of wrist and hand were noticed on left and right sides. On February 16th temperature showed inclination to fall and reached the normal on the 21st. A slight rise to

99.4° took place the same evening, but the following morning temperature reached 98° and remained subnormal for four days. On the 26th it rose to 99.8°, and again two days later. On March 1st temperature was normal, and patient was allowed to get up. No further rise took place, and convalescence was rapid, though there was some troublesome oedema of legs and feet, and the stiffness of wrists required treatment by massage. Discharged on March 15th. Throughout the illness, with the exception of occasional delirium, general condition had been quite good, and there was no evidence of the formation of abscesses internally. On February 6th 2 c.c. were taken from a vein of the arm and the resulting culture remained sterile.

*Fatal cases.*

1. *Erysipelas ; scald of head.*—E. H—, female, *æt.* 15 months. Two days before admission the child sustained scald of scalp from hot tea. Noticed to be ill on day of admission, when the frontal area of scalp exhibited a large ulcerating surface. Marked oedema of scalp and eyelids. Red, sharply margined rash surrounding the zone of ulceration. Temperature 102°. Scald was cleaned up under chloroform on second day. Temperature rose again two days later to 102°, associated with spread of erysipelas down back of neck. Wound very dirty, appetite poor. Some cough present. Temperature did not rise again to 102°, but gradually fell, and when death occurred on eighth day was 99°. P.M. Organs healthy.

2. *Erysipelas of leg.*—A. B—, female, *æt.* 72. Admitted with two weeks' history of pain, redness and swelling of right foot. On examination erysipelas was found to extend as high as the knee, and on dorsum of foot were several patches of gangrenous skin. Temperature 101°, pulse 92, urine contained faint trace of albumen, no sugar. Erysipelas spread up leg. Gangrenous areas also extended over foot. On third day 20 c.c. of anti-erysipelas serum were injected. Temperature, which had been 101°, rose shortly after to 103°, falling suddenly again to 99.4°. Pulse became more rapid, reaching 100 on morning of fifth day and 120 the same evening, when death took place. P.M.—Anterior tibial artery contained softening clot just below its origin. A quantity of pus was present beneath the skin and between muscles of the leg. This condition was only present on right side. Spleen and liver were both enlarged and soft. Pleuræ contained adhesions on both sides, and lungs were congested and oedematous.

3. *Erysipelas of arms and legs ; cellulitis.*—S. P—, male, *æt.* 42, store-keeper. Sore on thumb of left hand for seven days. Treated as out-patient. Erysipelatous eruption noticed twenty-four hours before admission. On examination erysipelas of hand, forearm and lower half of left arm, with numbers of large blebs. Similar eruption around varicose ulcer of left leg. Temperature 103.2°, chest *nil*. Incisions were made into thumb on day of admission, as eruption showed signs of spreading, and the following day temperature had reached 104.2°; 20 c.c. of anti-erysipelas serum were injected, and this was repeated on three subsequent days, 170 c.c. being administered in all. Erysipelas of hand and arm showed signs of fading, but that on leg increased. No noticeable fall of temperature or improvement of condition resulted after serum treat-

ment. Signs of suppuration were present on tenth day in arm, and patient was very restless, with persistent fever. Incisions were made and pus evacuated. Similar condition was found in leg and incisions were made in this situation two days later. Some diarrhoea was present, and temperature never fell below 100°. Condition grew worse and death occurred on fourteenth day. P.M.—Base of right lung adherent. Both lungs oedematous. Heart enlarged, muscle pale, recent vegetations on aortic valves, which were still competent. Liver large and fatty, spleen large and soft. Other organs normal.

4. *Erysipelas of arm.*—E. L—, male, æt. 57, gardener. Wound of finger five days before admission. Red, diffuse swelling of hand and arm noticed the next day. Incision made before admission. On examination large blebs on hand and arm of right side, with oedema of skin in erysipelatous area extending up to shoulder. Incised wound present in forearm. Signs in chest of chronic bronchitis. Arm treated by application of starch-powder. Temperature on admission had been 100°, falling to 98° in sixteen hours, and only rising again to 99·6°. On second day 30 c.c. of anti-erysipelas serum were given, and this dose was repeated twice during the next twenty-four hours. Maximum temperature 100·6°, falling after second injection of serum to 98°. The rash showed no tendency to spread, there was no sign of pus beneath the skin, but the patient was obviously suffering from toxæmia. On the third night temperature reached 99·8°, and death occurred the following morning. P.M.—No suppurative cellulitis. Some atheroma at root of aorta and slight thickening of aortic valves. Old pleural adhesions and intense congestion of lower lobes on both sides. Bronchial glands showed old calcified tubercle. Other organs healthy.

5. *Erysipelas of thigh.*—Q. G—, female, æt. 5 months. Admitted on April 20th, with three days' history. On admission erysipelas all over posterior and outer aspect of right thigh. No bullæ, no signs in chest. Temperature 103·8°. Pulse 160. Respirations 52. Rash spread rapidly towards back, and temperature remained at 103°; 4 c.c. of anti-erysipelas serum were injected on second day. No fall in temperature was noticed for twenty-four hours. The rash spread further over the back, and child had diarrhoea. Temperature on fourth day 102°. Pulse 140. Respirations 40. Rash ceased to spread on April 25th, but the next day slight retraction of head was noticed, temperature rose to 104°, death occurring on seventh day. P.M.—No cellulitis. No excess of fluid in serous sac. Lungs showed patchy collapse, but no bronchitis. Other organs healthy.

*Pyæmia* (admitted with the disease).—Males 3, females 4. Died 5. Chronic 1. Readmission 1. *Bacillus pyocyaneus pyæmia*, 1.

*Primary focus.*—Wound of thumb 1; periarticular abscess of ankle 1; puerperal 1; wound of finger 1; acute periostitis of femur 1; necrosis of tibia 1.

#### *Fatal cases.*

1. *Pyæmia, Bacillus pyocyaneus.*—F. E—, æt. 25, male, porter. Ten days before admission patient cut his right thumb, and the sore did not heal satisfactorily. A few days later the right arm became painful and swollen, and the swelling extended to right side of chest-wall. Two days before admission the axillary swelling became bright red, vomiting occurred, and patient suffered

from diarrhoea. On examination there was a large area of chest-wall which was swollen and red, the skin being oedematous. A sore was present on right thumb, not healed. Temperature  $105.6^{\circ}$ , respirations 60, patient somewhat delirious. 30 c.c. of anti-erysipelas serum were administered, and the dose was repeated the next day, when the swelling was incised and some serous fluid evacuated. Temperature dropped to  $101^{\circ}$ , but the following day it again reached  $106^{\circ}$ . On 4th day tubular breathing was heard over both lungs in front; the operation wound was discharging a quantity of watery fluid. Two days later a swelling was observed above left elbow. No further abscesses were observed, but temperature remained high, reaching  $106.6^{\circ}$  on 15th day. A blood-culture was taken and a bacillus grown which resembled the colon bacillus; therefore anti-colon serum was administered up to 100 c.c., but no improvement resulted; several rigors took place, and on 29th day an offensive abscess in buttock was opened. Temperature rose again the following day from  $106^{\circ}$  and then gradually subsided, becoming subnormal shortly before death, four days later. Pathological report—bacillus grown from blood was Gram-negative; bacillus from pus, the *Bacillus pyocyaneus*, precisely similar to the culture obtained from blood. P.M.—Abscess present among muscles of left arm. This contained yellow, odourless pus and had not been drained. Other abscesses had been well drained. Left pleura contained 26 ounces of sero-purulent fluid. Left lower lobe of lung coated with lymph. Left upper lobe contained a small abscess. Right lung oedematous. Liver large and fatty, spleen soft and diffuent, kidneys congested, other organs normal.

2. *Puerperal pyæmia*.—M. E. S—, æt. 24, female, married. Occasional hæmoptysis, last attack 6 weeks before admission. Confinement on September 20th, 1905, lochia abundant, not very offensive. Patient got up on 10th day, and after having been up 3 days an abscess developed in right hand, and shortly afterwards swelling in calf, and, later, one on back of left hand. Discharge never very offensive, ceased two days before patient was admitted, on October 30th. On examination healing abscesses were present in right hand, left hand, and left calf. Some crepitations could be heard at lower part of left lung. Temperature  $100.4^{\circ}$ . On 4th day, as temperature had reached  $104^{\circ}$  the day previously, the uterus was curetted and retained products removed. Condition improved, but some blood was coughed up the following day, and shortly afterwards temperature again rose to  $104^{\circ}$ . Hectic fever was present for 1 week, when the daily rises of temperature became much greater, and on 14th day temperature reached  $106^{\circ}$ . An abscess on back of left hand was incised, and an intra-uterine douche of creolin was administered. On the two days following temperature again reached  $106^{\circ}$ , and pulse rate was 120 and weak. No improvement took place, and temperature remained high though at a slightly lower level. Death on 27th day. Treated throughout by daily vaginal douching. No P.M.

3. G. S. J—, æt. 18, male, stereotype apprentice. Past history good. No knowledge of any wound or accident. One week before admission patient felt ill, and shortly afterwards complained of pain in left foot. For three days before admission there was loss of appetite, some fever, and occasional shivering fits.

Swelling on foot had been incised. On admission patient was delirious, the tongue was dry and furred, pulse 120, feeble, temperature 101°. Bowels constipated, incontinence of urine. On outer side of left ankle was a small red patch around the site of incision. No fluid in joint. An incision was made and a periarticular abscess was opened on outer side of ankle. Condition grew rapidly worse, and on 3rd day temperature reached 104°, falling in 24 hours to 102°, but rising again on 5th day to 107·8. This rise took place just before death. No further signs of abscess had been manifested. P.M.—Acute fibrinous pleurisy on left side, with thick exudate over lung and diaphragm. Slight pleurisy also on right side. Both lungs oedematous and congested. Liver showed cloudy swelling, spleen enlarged and soft. No visceral abscesses.

4. *Pyæmia; acute infective periostitis of femur.*—E. H—, æt. 7, male. Ten days before admission patient developed a sore on heel from a rusty nail in his boot. Five days before admission patient attended school, but was drowsy throughout the day, at the end of which he complained of severe pain in right leg. He was therefore put to bed and remained there until admission. Bowels during attack were unopened, and nocturnal delirium was present. On admission the boy looked very ill, the right thigh was greatly enlarged, and deep fluctuation could be felt. Metastatic abscesses were present in the abdominal wall, on the hands and ears; temperature 102·2°, pulse 160, respirations 32. Condition was too grave to permit operation the same day, but after 24 hours there was some sign of improvement, and the abscess in thigh, which was subperiosteal, was opened and freely drained; 20 c.c. of anti-staphylococcus serum were injected, and another 30 c.c. the next day. Slight fall of temperature, from 103° to 101·2°, resulted, but pulse remained about 160, and general condition was very bad. Temperature rose again to 103·8°, and death occurred on the 4th day. P.M.—The whole of femoral shafts were bathed in pus, and the periosteum was for the most part separated. The abscess had extended from a short distance below the lesser trochanter to the lower epiphyseal line, but there was no implication of the epiphysis. Knee-joint was inflamed but contained no pus. Medulla of femur healthy. Pleuræ were adherent, the adhesions not being recent. Lungs showed diffuse broncho-pneumonia with sub-serous hæmorrhages beneath the visceral pleura. Pericardium acutely inflamed, containing a quantity of pus. Numerous small abscesses in myocardium. Tricuspid valve showed recent vegetations. Spleen contained a few small infarcts. Numerous miliary abscesses were present in renal cortex. A large abscess was present in right axilla, with swelling of adjacent lymphatic glands. Mediastinal glands also swollen. Right parotid uniformly swollen, but containing no pus. Pathological report—parotid shows acute inflammation with enormous masses of micro-organisms.

5. C. B—, æt. 16, female. Sore on finger three weeks ago. Four days before admission pain in right ankle, the patient feeling extremely ill, suffering from vomiting and diarrhoea. On admission, slight swelling and extreme tenderness were present around right ankle, particularly over outer surface of os calcis. Skin was not reddened. Spleen easily palpable, tongue dirty, temperature 103°, pulse 120. Slight improvement was noticed on second day, but on evening of third day temperature rose to 105° and patient had a rigor, which was repeated



once. Pain around ankle disappeared and left hip became painful. Drowsiness made its appearance and patient lost control of bladder and rectum. On fifth day patient was in a comatose condition, respirations were stertorous, urine contained albumen, pulse rate was 148, and temperature 104°. On seventh day suppurative panophthalmitis was present in right eye and iritis in left eye. Twenty c.c. of anti-streptococcus serum were injected after a blood-culture had yielded a pure growth of *Streptococcus pyogenes*. No improvement resulted, no further abscesses developed, temperature rose to 107·4° just before death, which occurred on ninth day. Culture from eye pure growth of *Staphylococcus albus*. Inquest P.M. revealed two abscesses in the spleen.

*Tetanus.*—Male 1. Died.

*Point of inoculation.*—Uncertain; supposed to be wound of arm.

*Treatment.*—Anti-tetanic serum subcutaneously, chloral, chloroform.

*Tetanus.*—A. I.—, æt. 20, male, labourer. No reliable information could be obtained as to length of incubation period or site of inoculation. This latter was supposed to be the arm. Temperature on admission 99·4°, pulse 120, respirations 28. Patient complained of severe pain in back in the intervals between spasmodic seizures, but was in a more or less unconscious condition. 30 c.c. of anti-tetanic serum were injected shortly after admission, followed by a spasm half an hour later. 40 gr. of chloral were given *per rectum*. Slight spasmodic contractions occurred an hour later, and were repeated twice at intervals of half an hour. Profuse perspiration was present; patient was able to swallow milk. A further 30 c.c. of serum was given in the same evening, but spasms were repeated during the night. Temperature in first 6 hours rose to 103·6°, falling again to 102° in the morning of 2nd day. Patient was very restless, and the spasms were very frequent. Early in the morning of 2nd day breathing became stertorous and chloroform was administered, a hypodermic injection of morphia (minims 5) was also given. Patient lapsed into unconscious condition. Spasms were repeated at frequent intervals throughout the morning of the 2nd day in spite of administration of chloral, chloroform, and anti-tetanic serum. A very severe spasm was observed 20 minutes before death actually took place in a relaxed condition. Patient was in hospital 24 hours. P.M.—Finely built man. Various abrasions were present on surface of body, and a small recent punctured wound was observed on left instep. All the organs including spinal cord appeared normal.

*Septicæmia.*—Males 2. Died 1.

*Primary lesion.*—Cellulitis of leg after abrasion 1. Sore on heel with infective endocarditis 1.

*Treatment.*—Incision 1.

*Fatal case. Cellulitis of leg; septicæmia.*—R. R.—, æt. 56, male, skin dyer. One week before admission patient fell down with right leg beneath him. The leg was bruised below the knee, and shortly afterwards became very painful and swollen. He was treated by a doctor, but showed no improvement. On admission patient was wandering and unable to give a satisfactory account. Several bullæ were present below the right knee, and the whole leg was greatly swollen to the level of the knee-joint. No pulsation could be felt in anterior or

posterior tibial arteries, and while the upper part of the leg was hot the distal portion was cold. Rhonchi could be heard all over chest, and respirations were very rapid and shallow, being 44 per minute. Pulse 140, temperature 102°. The next day temperature rose suddenly from 102° to 104°, pulse-rate became 156, and patient became more delirious. Death on 2nd day. P.M.—Right leg showed numerous bullæ containing blood-stained serum, the epithelium had desquamated in patches, leaving a raw surface. No pus was present in the tissues. The vessels of the limb showed thickening and calcification, but no rupture or thrombosis of the main trunks was found. Aortic atheroma. Both lungs were greatly congested in their lower lobes. All other organs healthy.

*Syphilis, primary.*—Males 3. Penile chancre. *Spirochæta pallida* present in 1, interstitial keratitis 1.

*Treatment.*—Circumcision 2, medicinal 3.

*Primary syphilis with secondary eruption.*—S. L—, *et.* 70, male, labourer. Patient denied history of syphilis. Three months before admission left testicle was injured, and the patient observed a swelling on left side of scrotum. This gradually subsided, but six weeks before admission induration of glans penis was observed, together with some discharge, for a week before admission, from beneath prepuce. Patient admitted having had sexual intercourse six weeks before the sore on penis was observed. On examination the distal third of the penis was indurated and the skin over it inflamed and hyperæmic, but the swelling was painless. The prepuce could not be completely retracted, and a viscid discharge was present beneath it. Left testis was enlarged uniformly and very hard. The right testis was soft and atrophic. Left inguinal glands were enlarged. No difficulty on micturition; urine normal. The case was originally thought to be one of epithelioma, but on 20th day a secondary eruption appeared over chest and abdomen, and the mucous membrane of the pharynx was congested, and this took place although on 3rd day patient had been treated by administration of mercury and potassium iodide. Secondary eruption rapidly disappeared when Hutchinson's pill was administered. Discharged on 24th day.

*Congenital syphilis; primary chancre; phimosis.*—W. F—, male, *et.* 25, labourer. Family history good. When a child patient had measles, and eyes were noticed to be affected shortly afterwards, and their condition improved slowly, but impairment of vision persisted. No history of other lesions of congenital syphilis could be obtained. Infection with acquired syphilis some weeks before admission, the chancre having appeared three weeks after infection. On examination the eyes presented the characteristic residua of interstitial keratitis. Teeth negative, no other signs of the congenital form except a nearly healed perforating ulcer at junction of hard and soft palate. Penis showed a preputial sore, having characters of a Hunterian chancre. No secondary symptoms had been observed. Investigation of this chancre revealed the presence of the *Spirochæta pallida*. Circumcision was subsequently performed, and the wound healed fairly well, but patient was readmitted in 1906 for spreading ulceration at site of operation.

*Syphilis, secondary.*—Males 2.

*Treatment.*—Medicinal 2; incision of suppurating inguinal glands 1.

*Tertiary.*—Males 9. Females 6. Readmissions 3. Gummatous osteo-periostitis, femur 1, tibia 1. Radius and clavicle 1. Ulceration of uvula 1; penis and scrotum 1; skin 2. Gummata of knee 3; over patella 1. Synovitis 1. Peri-synovial gummata 1. Myositis of rectus femoris 1. Dactylitis 1.

*Treatment.*—Exploration of femur 1. Amputation through middle of thigh 1. Potassium iodide in all.

*Congenital.*—Males 2. Females 2. Osteitis of femur 2. Ulceration of legs 1. Fibrous ankylosis of knee 1.

*Treatment.*—Excision of knee 1. Iodides 3.

## LOCAL DISEASES.

### TUMOURS AND NEW FORMATIONS.

#### *Carcinomata.*

*Breast, spheroidal-celled.*—Male 1; females 63. Readmission 1. Died 1. Atrophic 1; encephaloid 4; two separate nodules in breast 1; inoperable 4. Recurrent locally 7; recurrent locally and in glands 1; recurrent in axillary glands 1; recurrent in supra-clavicular glands 4; recurrent in spine 1. Metastasis in spine 1. Shortest history 2 weeks; longest 20 years. Married and widowed 45.

*Treatment.*—Amputation of breast and clearance of axilla 38; amputation of breast only 6; excision of recurrent growths 10; oophorectomy 1; Thiersch graft 5.

*Carcinoma of breast; recurrence in scar and supra-clavicular glands; squamous-celled carcinoma of axilla.*—C. G—, female, *æt.* 50, widow, house-keeper. Right breast amputated for carcinoma seven years ago, the axilla being cleared. Operation was followed by some swelling of arm due to lymphatic obstruction. Painful. Six years after first operation a recurrent growth in scar was removed. Microscopically spheroidal-celled carcinoma. Swelling of arm persisted, and the pain became more severe. Four and a half months before admission a further nodule was noticed close to axillary scar. On admission a hard nodule was found in anterior axillary fold. It was attached to the skin. A small enlarged gland could also be felt in the right supra-clavicular fossa just above the junction of middle and outer thirds of clavicle. This was the size of a large pea and freely movable. The arm showed signs of lymphatic and venous obstruction. On the sixth day the axillary tumour was excised and found to be very hard and surrounded by dense cicatricial tissue. The wound healed rapidly and patient was discharged on 21st day. Microscopical report, squamous-celled carcinoma. Patient was readmitted a month later, when more than one gland could be felt in the right supra-clavicular fossa. These were removed and found to be secondary growths to the breast which had been amputated seven years previously. Microscopy, therefore, revealed a spheroidal-celled carcinoma. Convalescence uneventful, discharged at end of a fortnight.

*Fatal case.*—*Carcinoma of breast; erysipelas of wound.*—R. B—, female, *æt.* 46, married. One sister died of cancer of the bowel; consumption also in family. Nine months before admission patient observed a lump in right breast; she was not

feeling well at the time and therefore stayed in bed, and the swelling disappeared at the end of a week. Five weeks later it recurred and gave rise to pain, though there was no noticeable enlargement of the growth. Five months ago an enlarged gland was felt above the right clavicle. Pain has increased during the three weeks preceding admission. On examination the right breast contained a hard, rounded mass in its upper and outer quadrant, freely movable under the skin and over the pectoral fascia. No dimpling of skin and no retraction of nipple. A chain of enlarged glands could be felt on internal wall of the axilla, and an indurated mass in the right supra-clavicular fossa. None of these tumours were tender on palpation. Urine healthy. Operation performed on the 11th day, the breast only being amputated. The tumour had the appearance of a very cellular growth, and the microscopical report was: Spheroidal-celled carcinoma. The patient did very well until the 10th day, when the temperature suddenly rose to 105°, vomiting occurred several times, and pulse rate was 136, respirations 40 per minute. The eruption arose round the wound, which had healed by first intention, and spread rapidly over chest and down right arm, the temperature remained high, and the patient became delirious on the 6th day of the attack; the respirations were constantly above 80, and signs of consolidation were present at right apex. The wound broke down and discharged freely. The temperature only fell below 100° on three occasions, and while the rash faded over some areas it spread extensively to other parts, and death took place on the 13th day of the erysipelas. P.M.—Large abscess cavity at site of operation, with a sinus discharging offensive pus; axillary and supra-clavicular glands enlarged from new growth. Right pleural cavity contained pus, but no direct communication could be found between abscess cavity and pleura; lung collapsed; other organs healthy. Pathological report: Glands show spheroidal-celled carcinoma.

*Carcinoma of cervical glands*.—Male 1. No primary growth found; spheroidal-celled carcinoma.

*Treatment*.—Excision of glands in both anterior and posterior triangles.

*Carcinoma of testis*.—Male 1.

*Treatment*.—Orchidectomy.

*Carcinoma of prostate*.—Males 2. Died 1.

*Treatment*.—Partial enucleation 1; prostatectomy 1. Both by supra-pubic route.

*Fatal case*.—*Carcinoma of prostate; cystitis; supra-pubic prostatectomy*.—B. B—, æt. 64, male, shoemaker. History of 4 months' nocturnal micturition, with pain and difficulty in the act. Retention with dribbling overflow had occurred. Rectal examination revealed great enlargement of prostate and retention was present on admission. Urine acid, no albumen, blood, or pus. Condition relieved by daily catheterisation. Operation performed on 9th day, when symptoms of cystitis were present, the urine being alkaline and pus abundant. Bladder opened by supra-pubic route after lavage and prostatectomy performed. Drainage by Sprengel's pump. Considerable shock after operation, but condition improved after 48 hours and amount of urine drained was normal; temperature rose 4 days after operation to 101·6°, remaining between 101° and 102° for 24 hours, when it fell to 99°, but general condition grew worse and

death took place 6 days after operation. Pathological report: Culture of prostate sterile. Microscopically, spheroidal-celled carcinoma. P.M.—Supra-pubic wound unhealthy. Bladder walls thick, showing gross cystitis. Prostate completely removed; no evidence of remaining new growth. Kidneys showed well-marked pyelonephritis and ureters also contained pus. Liver fatty. Small effusion of sero-fibrinous character over base of right lung. Lower right lobe solid. Considerable congestion and œdema of rest of lungs; obsolete phthisis at both apices. Bronchial glands unaffected. Other organs healthy.

*Carcinoma of stomach.*—Males 8; females 1. Readmission 1. Died 8.

*Treatment.*—Gastro-jejunostomy 6; exploratory cœliotomy 3. Subsequent jejuno-jejunostomy 2. Previous colostomy for obstruction by adhesions 1.

*Fatal cases.*

1. *Carcinoma of pylorus and stomach.*—A. L.—, æt. 63, male, naval pensioner. Attack of diarrhoea with vomiting 2 years before admission, the vomit being large in amount and coffee-coloured. No bright blood was ever vomited. Vomiting in this first attack recurred frequently for 3 months, when complete recovery took place. Seven months before admission vomiting recurred and persisted, occurring usually twice a day, unaccompanied by pain, and bearing a variable relation to meals. Sometimes it occurred a few minutes but more often from 2 to 4 hours after taking food. Bowels regular; loss of 2 stone in weight since attack of vomiting 2 years ago. On examination some fulness present in the epigastrium exhibiting occasional peristalsis. A large, oval mass of very hard resistance felt beneath right rectus. Position of mass very variable. Apparently 4 inches in length and 3 inches broad, freely movable, but not capable of being drawn down below the umbilicus. Free movement with respiration, liver edge just felt below costal margin. Vomit contained no free hydrochloric acid but lactic acid was present. Treated on Medical side by gastric lavage with no relief, daily vomiting occurring with great regularity. On transference to Surgical side an anterior gastro-jejunostomy was performed on 5th day. The stomach was occupied by a large growth involving pylorus and greater curvature extending into substance of posterior wall. No glands were felt. Persistent vomiting of the vicious circle type followed this operation, and a further anastomosis was performed 2 days later, a jejuno-jejunal junction being effected. This effectually relieved the vomiting, and patient's condition remained good for 3 days, when he complained of pain and a feeling of coldness in the left leg. The next day an area of anæsthesia was present over the foot, with a ring of hyperæsthesia about half-way up the leg. Popliteal artery could be felt, but no pulsation was observed in dorsalis pedis or posterior tibial. No recurrence of vomiting. Death occurred rather suddenly on 10th day. P.M.—All the intestinal junctions were sound. Considerable water-pressure was required to pass through first anastomosis from stomach to jejunum, although the opening was large; the water which did pass entered proximal and not the distal loop. This was apparently due to the proximal loop being too long, so that jejunum had sharp downward bend at each end of anastomotic opening. The opening was into the cardiac portion of stomach, rather high up. The second anastomosis was perfect and acted well. A large ulcerated growth occupied the pyloric third of the stomach, ending abruptly at the duodenum; only one enlarged gland was

found, lying just below coeliac axis. No peritonitis. No other metastases. A globular thrombus was firmly attached to wall of left common iliac artery, but did not occlude it. It was the size of a Spanish nut. A similar clot was found in left popliteal artery, apparently detached from the iliac thrombus. Right popliteal artery normal. Generalised arterial thickening. Pathological report—Stomach: columnar-celled carcinoma; glands; no evidence of new growth; embolus shows inflammation.

2. *Carcinoma of stomach; previous large intestine obstruction*.—C. S., *et. 47*, female, married. Family history good. Previous health good with the exception of constipation. Four months' history of dyspepsia and irregularity of the bowels. Admitted on April 16th, 1905, with three days' history of abdominal pain occurring at frequent intervals in neighbourhood of umbilicus. Frequent vomiting after food. Bowels not open for three days. On admission the abdomen was not distended, but coils of small intestine could be seen below the umbilicus and occasional peristalsis was visible in this region. No tenderness or rigidity on palpation. No tumour could be felt, rectal and vaginal examination both negative. Coeliotomy performed on day of admission through right rectus. The transverse colon and cæcum were found to be distended, while the pelvic colon was collapsed. Thickening was felt in the neighbourhood of splenic flexure, and colostomy into transverse colon was made through separate incision. With the exception of slight difficulty in micturition and suppuration of the exploratory incision, convalescence was uneventful, and patient was discharged on June 12th. The colostomy opening worked satisfactorily for the first three weeks and then some motions were passed *per anum*. After discharge patient gradually got weaker and thinner and a fortnight after discharge the artificial anus ceased to work. Patient was readmitted on June 30th, when the abdomen was very distended and the skin over it was glossy, especially in the left upper quadrant. Patient had lost considerable amount of weight since discharge. There was slight shifting dullness in the flanks. The abdomen was reopened on day of admission through site of former artificial anus and a large amount of fluid escaped. Multiple nodules of growth were found all over the peritoneum exposed. The case was hopeless, and the abdomen was closed after colostomy opening had been re-established. There was considerable shock after operation and patient only survived three days, the bowels being unopened, abdominal pain being severe, and pulse rate rapid. P.M.—Body emaciated. Stomach and great omentum converted into a thick, leathery mass. On opening stomach a carcinomatous growth was found projecting into its interior at junction of cardiac and pyloric portions, but the whole stomach was thickly infiltrated with growth. The obstruction had been caused by adhesions between stomach and omentum to splenic flexure of colon, producing kinking. No growth of colon was present. Mesentery was thickened by growth and by its contraction had caused obstruction of small bowel four feet below commencement of jejunum. Numerous secondary deposits were found scattered throughout the peritoneum in substance of liver and in glands of posterior mediastinum, terminating in Virchow's gland behind the left sterno-mastoid. These glands followed the course of the thoracic duct.

3. *Carcinoma of stomach*.—F. W.—, *et. 37*, male, confectioner. Pleurisy four

years ago. Four months before admission onset of dyspepsia with severe pain after any food, the pain being also severe at night, at which time vomiting occurred, usually once in every twenty-four hours. No hæmatemesis, no melæna. On admission patient thin and emaciated. Tongue covered with brown fur, abdomen sunken, visible swelling present above umbilicus, elongated transversely, and moving freely with respiration. Palpation revealed a hard, nodular swelling above umbilicus and beneath right rectus the size of a large walnut. Mass slightly tender, liver edge easily felt just below costal margin. Percussion note normal. Anterior gastro-jejunostomy on second day, the stomach being found to be infiltrated with growth except for about two square inches of its anterior surface. After operation persistent vomiting was present, and the vomit was abundant and of a dark brown colour. Severe pain was also present in epigastrium. Relief was obtained by rectal feeding, and six days after operation patient was able to take milk by the mouth. Pain, however, recurred with great severity four days later and the vomiting was repeated. Some diarrhoea was also present. This vomiting was repeated at frequent intervals, and the pain was severe until death occurred, on 25th day. No P.M.

*Carcinoma of pylorus.*—Males 4; females 2. Died 2. Spheroidal-celled carcinoma 2.

*Treatment.*—Posterior gastro-jejunostomy and subsequent pylorectomy, with removal later of appendix for abscess 1; gastro-jejunostomy 4; nil 1.

*Carcinoma of pylorus; appendicitis with abscess; gastro-jejunostomy; pylorectomy; appendicectomy; recovery.*—R. D—, æt. 35, female, married. Family history negative. Past history good. Loss of weight for six months, with two attacks of violent abdominal pain accompanied by vomiting during the last two months. In intervals between attacks the pain subsided, but the vomiting was frequent, the vomit being dark brown in colour. Habitual constipation, no bleeding from rectum. On admission the stomach was dilated and prominent and could be easily seen and its outline mapped out on abdominal wall. Peristaltic movements from left to right were also observed. Beneath the right rectus was a hard, movable mass which was not tender. No tenderness over rest of abdomen, liver not enlarged. Urine contained a trace of albumen. On day after admission a posterior gastro-jejunostomy was performed and progress afterwards was excellent, there being very little pain and no vomiting. On the 17th day a further celiotomy was performed and the tumour of pylorus which had been found at former operation was excised. The stomach and duodenum were closed with two rows of silk sutures, the abdominal wound was closed, and patient made an excellent recovery, being allowed up on the 43rd day. While patient was out of bed she experienced slight discomfort in lower part of abdomen, but was allowed up every evening for the following week, at the end of which time she was suddenly seized with violent pain in the right iliac fossa. Patient therefore remained in bed, and temperature, which had been normal, rose gradually to 101°, pulse rate 84, respirations 24. At the end of twenty-four hours temperature had reached 101·6°, pulse rate was 132, bowels not open for two days. A well-defined mass was then found in right iliac fossa, which was tender on palpation. An incision was made over this mass on 4th day from onset of pain and an abscess around the appendix was found containing dark green non-offensive pus.

The abscess was irrigated and the appendix was removed and reserved for microscopical examination. The abscess cavity was drained. Convalescence was uneventful, though patient complained of slight discomfort after this operation. Wound healed rapidly, and patient was discharged fourteen weeks after admission. Microscopical examination revealed no evidence of new growth in appendix or mesentery.

*Fatal cases.*

1. *Carcinoma of pylorus.*—J. T—, æt. 63, male, carpenter. History of long constipation, relieved by purgatives. Appetite was first observed to fail 1 month before admission, and during this period copious vomiting had occurred sometimes three times a day without relation to food. Pain in stomach steadily increasing, pronounced constipation, very little more than flatus being passed. Loss of 2½ stone in weight during last 18 months. On admission contour of abdomen irregular. Elongated oval swelling observed crossing abdomen from right to left nipple line, and extending from point 3 inches below xiphisternum to 1 inch below umbilicus; epigastrium above this sunken. Peristaltic waves of stomach, which was obviously dilated, were easily elicited. On palpation this tumour was hard, moved freely with respiration, and allowed of some lateral movements. Percussion note over it was tympanitic and continuous with stomach note. Lavage of stomach caused return of fluid, increased by between 2 or 3 pints, which was the amount patient had been in the habit of vomiting daily. Condition of patient very poor; vomiting persisted in spite of gastric lavage and operative interference was out of question. Death occurred 3 weeks after admission. P.M.—Body extremely wasted; considerable matting of organs in upper part of abdomen. Stomach greatly dilated. Large growth present at pylorus, extending along lesser curve of stomach to within 1½ inches of cardia. Internally the growth was found to be ulcerated and sharply limited at junction of pylorus and duodenum. Many adhesions were present around the growth and numerous glands were found in its neighbourhood. The cystic duct was much compressed by growth and the gall-bladder was considerably distended. No metastases in abdomen. Pleuræ showed adhesions on both sides and lungs patches of broncho-pneumonia with two deposits of growth in each lower lobe. Pathological report: Spheroidal-celled carcinoma, with marked mucoid degeneration.

2. *Carcinoma of pylorus; posterior gastro-jejunostomy.*—A. M—, æt. 36, male, jeweller. Dyspepsia with vomiting for 6 months, vomiting occurring only at night. Hæmatemesis of slight degree on one occasion only 4 months before admission. Considerable flatulence and eructation. On admission, thin wasted man with marked dilatation of stomach. No tumour felt through abdominal wall. Administration of test meal revealed absence of free hydrochloric acid. Symptoms temporarily relieved by lavage of stomach. Operation 3 weeks after admission to Medical ward. Gastro-jejunostomy performed, the posterior operation being carried out with excision of portion of bowel wall. Rectal feeding for 3 days; condition fairly good for 6 days after operation with vomiting on two occasions only. Gradual return to full diet, which was taken without pain 14 days after operation. It was thought that patient's condition at this



time warranted attempt to remove growth, but on reopening the abdomen it was found that since the first operation growth had extended a considerable distance along lesser curvature of stomach. Abdomen was therefore closed. Good condition was maintained during the next week, at the end of which there was a recurrence of pain after food, slight flatulence, and vomiting on one occasion. These symptoms increased in severity, and in spite of alterations in diet vomiting became persistent, abdominal pain increased, œdema of both feet was observed, and 7 weeks after second operation well-marked jaundice made its appearance, the urine contained bile, the stools were pale, and patient sank gradually and died. P.M.—Marked emaciation. On opening abdomen 10 oz. of clear fluid escaped and large mass of growth was found in epigastric region. Anastomotic opening was situated at lower curvature of stomach  $3\frac{1}{4}$  inches from pylorus, union sound, orifice into stomach about the size of a sixpence. A large, fungating growth was present, filling up the whole of the pylorus so that its lumen only admitted large size probe. Growth had spread along stomach walls for  $2\frac{1}{2}$  inches along lesser curve. Glands in its neighbourhood were all infiltrated with hard growth and head of pancreas was apparently involved. Liver showed several secondary metastatic deposits, and it was riddled with small cavities containing thick yellow fluid. Probe was passed with difficulty down common bile-duct. Lungs showed some œdema, with a little fluid in left pleura. Pathological report: Spheroidal-celled carcinoma of both stomach and liver.

*Carcinoma of jejunum.*—Male 1.

*Treatment.*—Lateral anastomosis.

*Carcinoma of small intestine and appendix.*—Male 1, died. Previous operation for irreducible umbilical hernia; readmitted for obstruction.

*Treatment.*—Resection of portion of intestine and appendix; circular anastomosis with second lateral anastomosis between ileum and transverse colon.

T. D—, male, æt. 59, joiner. Admitted on February 15th, with irreducible umbilical hernia noticed for two months. Operation on February 22nd; sac found to contain omentum, which in its central parts showed necrotic changes and was removed, stump being returned to abdomen. Radical cure by horizontal suture of aponeurotic layer, silk sutures being used. Progress uneventful except for slight discharge from wound. Patient went out on March 18th. Five months later readmitted with history of perfect health until six weeks before return to hospital. Then patient experienced sudden abdominal pain in umbilical region, and vomiting occurred and was repeated during the night of the same day. Since then abdominal pain persistent, with second attack of vomiting three days before admission, vomit being green in colour. Marked loss of appetite during this six weeks, pain, however, showing no definite relation to ingestion of food, of "rolling" character, and definitely located just above the umbilicus. Bowels rather loose. On examination in region of scar at umbilicus visible peristalsis with marked tenderness on pressure was present. Rest of abdomen apparently normal. Vomiting present after solid food, pain diminishing. Symptoms only slightly relieved by rest in bed and fluid diet, therefore operation performed on 10th day. Cœliotomy through right rectus revealed some clear, free fluid in abdomen. Small bowel presented two circular

strictures, about 3 inches apart, close to ileo-cæcal valve. Appendix showed similar thickenings and was removed, as was also 12 inches of the small intestine containing the two strictures mentioned above. Lumen of bowel restored by circular anastomosis. Further examination revealed another stricture above the resected area. Lateral anastomosis was therefore performed between ileum and transverse colon. Microscopical reports: No evidence of new growth in omentum removed at first operation; multiple strictures of small gut and appendix showed columnar-celled carcinoma. These strictures were found to be due to a hard, sub-mucous infiltration with thickening of mesentery, whitish on section with yellow centre. No actual ulceration of mucosa over them. Appendix three inches long, exhibiting three strictures of this character, about three quarters of an inch from each other, the proximal one being at the base. On peritoneal aspect of bowel throughout the portion resected, pea-like, hard, white nodules were seen. Signs of peritonitis supervened after operation, with abdominal distension, pain, and vomiting. Bowels opened by administration of calomel. Death four days after operation. P.M.—General peritonitis present. Axial anastomosis seven inches from cæcum quite sound. Three feet above this lateral anastomosis between small bowel and mid-point of transverse colon faulty; the giving way of this junction was responsible for the peritonitis. At intervals along the whole length of small intestine and at one or two points on the large were nodules such as those described above. One or two of these produced annular strictures. No actual invasion or ulceration of mucosa was observed, though both mucous and serous coats were puckered over the growths. A large mass of similar tissue was found running along the whole length of lesser curve of stomach, and this at one or two points appeared to have invaded the pancreas. A further mass was present along the course of the cystic duct, producing considerable dilatation of the gall-bladder. No affected glands were found. Other organs healthy. Pathological report of these growths: Columnar-celled carcinoma.

*Carcinoma of cæcum.*—Males 2.

*Treatment.*—Lateral anastomosis; ileo-transverse colostomy 1; ileo-iliac colostomy 1.

*Carcinoma of colon.*—Males 5; females 3. Died 4. Splenic flexure 1. Descending colon 2. Pelvic colon 5. Acute obstruction 6.

*Treatment.*—Colostomy, with subsequent resection and anastomosis 2. Axial 1. Lateral implantation 1. Lateral anastomosis of colon 1. Cæcostomy 1. Colostomy 4, with oophorectomy in one case for carcinoma of ovary.

*Fatal cases.*

1. *Carcinoma of pelvic colon; intestinal obstruction.*—H. McE—, æt. 53, female, married. Patient's mother is said to have died of cancer of bowels. Past history good until nine months before admission, during which time steady loss of flesh had been observed. No solid matter passed *per rectum* during this period. Stools streaked with bright red blood frequently during last six months. No action of bowels for ten days before admission, though flatus had been passed. Frequent vomiting of black stercoraceous matter for two days before coming to hospital. On admission, great distension of abdomen, with uniform enlargement,

Tense and tender all over, no mass to be felt. Percussion note resonant all over, except for some dullness in flanks; this, however, did not shift. Liver dullness partially obliterated in mid-axillary line. *Per rectum, nil.* Temperature 101°, pulse 120. Exploratory incision on day of admission revealed free gas in peritoneal cavity, with general peritonitis. Cæcostomy performed with Paul's tube. Marked collapse was present at end of operation, temperature fell to 97°, and death occurred within six hours of abdominal exploration. P.M.—Partial examination only. General peritonitis of marked degree was present with free gas. Cæcum remained distended and loaded with faecal matter. Ring carcinoma was found at commencement of pelvic colon with lumen  $\frac{1}{4}$  in. in diameter; the obstruction at this point had been rendered absolute by the presence of a large number of cherry-stones which had lodged in the lumen and on the proximal side of the growth. Several stercoral ulcers were present along the length of large bowel, and one of these about half way along transverse colon had perforated. No secondary growths found in abdominal organs.

2. *Carcinoma of pelvic colon and left ovary; intestinal obstruction.*—L. W—æť. 53, female, widow, housekeeper. History of chronic constipation for years. No satisfactory action of bowels for 14 days before admission, but there had been no vomiting and comparatively little pain. On examination abdomen was very distended, resonant all over, no tenderness on palpation, and no mass could be felt either through the abdominal wall or on rectal examination. Immediate operation performed. Median cœliotomy revealed great distension of colon. This was relieved by enterotomy. Left ovary was found to be represented by large cystic mass; this was removed and right-sided colostomy was performed. Condition after operation fairly good, but on next day vomiting of stercoraceous matter appeared and pulse became rapid and weak. Lavage of stomach evacuated two pints of black offensive fluid. Condition did not improve, and death took place within 24 hours after operation. P.M.—Abdomen showed marked median distension. This was due to enormous dilatation of cæcum, which was situated near the middle line. Descending colon was long and had been brought across to right inguinal region, where colostomy had been performed. The ascending colon and its mesentery were short, while the cæcum was free, and the transference of pelvic colon from left to right side of abdomen had pushed up the cæcum and produced an obstructive kink in the colon at hepatic flexure. Primary growth was situated at commencement of pelvic colon and a secondary nodule was present in wall of cæcum. There was no peritonitis. Right ovary also contained apparent malignant growth. Other organs normal. Microscopical report: Columnar-celled carcinoma of both ovaries, pelvic colon, and cæcum.

3. *Carcinoma of pelvic colon, perforating cæcal ulcer; left iliac colostomy; lavage; suture of ulcer.*—H. M—, æť. 75, male. Occasional attacks of constipation for three months before admission, each attack being marked by no action of bowels for 2 to 4 days. History of absolute obstruction for 14 days before admission. Unrelieved by medicine or enemata. Vomiting after food for 7 days, slight abdominal pain, never any blood or slime observed in motions. Some loss of weight. On admission, very feeble man, abdomen very distended, wall too tense to allow of satisfactory palpation. Universally tympanitic note

obtained on percussion, even in flanks. Liver dulness obliterated. Tongue moist and covered with dark brown fur. Pulse very feeble, 100 per minute. Temperature 99°; respirations 48. Enema given on admission produced no result. Operation on same day, abdomen being opened through right rectus. Perforated ulcer in cæcum sutured with double layer of Lembert's stitches. Ring carcinoma felt in pelvic colon, left iliac colostomy with Paul's tube. Peritoneal cavity, which was distended with gas and extravasated intestinal contents, washed out with saline. Drainage by rubber tubes. Pulse failed during operation; intravenous saline infusion carried out. On leaving theatre pulse-rate was 130 and weak. Patient exhibited very little power of recovery, temperature remained subnormal, and death occurred on 3rd morning after operation. P.M.—General plastic peritonitis, involving middle and lower segments and also lesser sac, most intense round cæcum. No collections of fluid in renal fossæ. Ring carcinoma found occluding lumen of gut at commencement of pelvic colon. Cæcum was bare of peritoneum in several places; the site of suture showed no repair and leaked slightly. No secondary growths. Some degree of atheroma of great arteries, aortic valves, and aortic flap of mitral. Adhesions at right apex and obsolete phthisis at right upper lobe. Other organs normal. Pathological report: Columnar-celled carcinoma.

4. *Carcinoma of pelvic colon; partial excision of bladder and growth of colon; colostomy.*—F. K—, female, æt. 31, single. Life-long constipation. Acute attack of pain in lower abdomen 13 days before admission, accompanied by constipation. Three days later vomiting occurred; purgatives and enemas were administered without result. Complete obstruction for nine days. On admission distension of lower abdomen, percussion note normal, no palpable tumour, pulse 80, tongue dry and furred. Aperients and enemas had no result, and vomiting occurred after admission to medical ward. Urine had not been passed on day of admission, but was afterwards found to contain both pus and blood. Cœliotomy through right rectus revealed mass in left iliac fossa. Incision was made over this tumour, which was found to be a growth of pelvic colon adherent to bladder. With considerable difficulty mass was brought to surface and excised, together with a portion of bladder wall to which it was adherent. Distal end of bowel was sutured, while Paul's tube was tied in proximal end. Bladder wall closed with three successive layers of Lembert's sutures. Condition immediately after operation fairly good, but no discharge of fæces occurred through tube, and temperature rose suddenly on the evening of the same day, and death occurred within 12 hours of operation. Microscopical report: Columnar-celled carcinoma of colon. P.M.—Pelvic cavity contained some turbid urine derived from perforation in anterior bladder wall. Annular growth of pelvic colon had only partially been removed. Sutures in posterior wall of bladder sound; no evidence of new growth in bladder wall. Stercoral ulcer with floor formed by adherent slough present in transverse colon. Pathological report: Columnar-celled carcinoma.

*Carcinoma of rectum.*—Males 20; females 15. Died 3. Readmissions 3. Longest duration of symptoms 5 years; shortest 3 weeks. No cases under 30 years of age. Acute obstruction 2; chronic obstruction 19.

*Treatment.*—Colostomy 19. Excision: By perineal route 3; trans-sacral 1 subsequent left iliac colostomy 1.

*Fatal cases.*

1. *Carcinoma of rectum; left iliac colostomy.*—E. W—, female, æt. 58, widow. Sudden attack of abdominal pain 12 weeks before admission, followed by diarrhœa. At this time stools were observed to contain slime and blood, the latter being at first dark and then bright in colour. Diarrhœa persistent and relieved only by morphia suppositories. Considerable loss of flesh. On admission, hard nodular growth felt in posterior wall of rectum. Finger would not reach above its upper limit. Fixed to front of sacrum. Liver edge felt, no nodules detected in it. Urine contained a cloud of albumen. Colostomy on 8th day, a Paul's tube being tied in and mesentery of bowel being fixed with mattress stitch. Vomiting occurred the next morning and persisted throughout the day. No passage of fœces through colostomy tube. Olive oil administered through tube, but without result. Condition improved, and action of bowel was obtained on third day through the tube. Two days later bowels discharged *per rectum* twice, condition of patient not so good; on following two days colostomy opening worked well, but at the end of this time the abdomen became distended, there was abdominal pain and tenderness even on gentle pressure, the sickness reappeared and became almost continuous, pulse rate was 84 but very feeble. No evidence of free fluid in abdomen. Death 10 days after operation. P.M.—On opening abdomen general peritonitis was found. Annular growth of rectum was also found. Partial examination only.

2. *Carcinoma of rectum; left iliac colostomy with Paul's tube; erysipelas.*—M. J. H—, female, æt. 58, widow. Chronic indigestion for many years. Occasional bleeding from hæmorrhoids for two years. Pain in rectum of dull, aching character for three months, increased by effort of defæcation. Streaks of blood noticed in motions for one month. Not much loss of weight. On admission a lump the size of a walnut found projecting into lumen of rectum. This appeared freely movable, but another small nodule was present on wall opposite this main mass, the latter occupying the anterior wall and being markedly ulcerated. The ulcer was felt  $2\frac{1}{4}$  inches from anal orifice. Left iliac colostomy performed on third day, bowel being divided and a Paul's tube inserted into each end. Condition after operation was good, though colostomy opening failed to work satisfactorily for five days. An enema was then administered with good result, and condition was favourable during next eight days, though there was tendency to evening rise of temperature. On 16th day after operation a typical erysipelatous eruption was observed round colostomy wound. Temperature reached  $102.4^{\circ}$ . Patient transferred to Block 8. Temperature remained between  $101^{\circ}$  and  $103^{\circ}$ , pulse about 120, and rash spread considerably. Pulse became feebler and more rapid, death occurring on fifth day of erysipelas. P.M.—Colostomy wound sound with congestion of skin around. Growth of rectum confined to anterior wall, forming a circular crateriform ulcer  $2\frac{1}{4}$  inches in diameter above level of internal sphincter. One infected gland present in meso-rectum. Kidneys healthy, the right having double pelvis and complete double ureter. Recent plastic pleurisy present on left side. Lung congested.

Right pleura showed numerous dense adhesions, while the middle lobe of lung showed what was probably a necrosing infarct, the lung above and below this being merely congested. Pericardium showed recent flakes of lymph around roots of great vessels. Heart-muscle rather soft. No metastases.

3. *Carcinoma of rectum; left iliac colostomy.*—C. H—, æt. 42, female, married. Two months before admission patient observed that a large amount of mucus was present in stools. Slight pain was felt in region of anus. Rectal examination made by doctor caused slight hæmorrhage. Apart from this no bleeding was observed. Some degree of constipation present, but no observable loss of weight. On admission rectal examination revealed annular growth 4 inches from anal orifice, just admitting the tip of finger and adherent to posterior aspect of uterus. Surface irregular and nodular. Base infiltrated. No enlargement of glands or liver present. Examined under anæsthetic the day after admission. Removal of growth found impossible. Left iliac colostomy, first stage, on 6th day, at which operation the peritoneum and appendices epiploicæ were found studded with small white growths somewhat granular on section. Colon free from these deposits was fixed in wound by glass rod passed through mesentery; second stage, 3 days later, by insertion of Paul's tube. No satisfactory action through tube was obtained for 48 hours. Pulse-rate was over 120 and temperature slightly raised. Twelfth day temperature rose to 101°, there was diffuse abdominal pain, respiratory movements were limited to the upper half of abdomen, and pulse rate rose to 176. No vomiting occurred, and after the removal of the Paul's tube, which had been effected 2 days before, there had been free discharge of fæcal matter. Stimulants produced very little improvement, and death occurred on 18th day. Microscopical report on appendix epiploica: Not carcinoma; nature of growth undetermined. No P.M.

*Recurrent carcinoma of rectum.*—Male 1, female 1. Local recurrence 1; recurrent in liver and omentum 1. Previous excision: 6 months 1; 2 years 1.

*Treatment.*—Nil.

*Carcinoma of liver.*—Males 2.

*Treatment.*—Exploratory cœliotomy.

*Carcinoma of gall-bladder.*—Female 1.

*Treatment.*—Cholecystectomy with partial hepatectomy.

*Carcinoma of pancreas.*—Male 1.

*Treatment.*—Cholecystenterostomy.

*Carcinoma of cervix uteri.*—Female 1.

*Treatment.*—Nil.

*Carcinoma of ovary.*—Females 4. Died 2. Squamous-celled 1.

*Treatment.*—Oophorectomy 2; previous gastro-jejunostomy and pylorotomy, with double oophorectomy and subsequent vaginal hysterectomy, 1.

*Carcinoma of ovary, bilateral; previous pylorotomy and subsequent vaginal hysterectomy.*—H. C—, female, æt. 30, married. In September, 1908, patient suffered from dyspepsia, with frequent vomiting and severe abdominal pain. On December 27th gastro-jejunostomy was performed and symptoms were relieved

for three months, when there was a recurrence of symptoms and a tumour was felt beneath right rectus. This was submitted to operation, a pylorectomy being performed. Six weeks before admission, in April, 1905, patient began to feel tenderness across lower abdomen, and the abdomen was observed to be distended. Sickness followed any variation of diet. On admission the abdomen was enlarged and the wall tense and tender. Dulness present in centre, but percussion note resonant in flanks. A slight thrill obtainable. Menstrual periods for 18 months irregular. Vaginal examination revealed a large mass in the pelvis, causing depression of right vaginal fornix. The mass was fixed to pelvic floor, and the uterus could not be accurately defined, as it appeared to be involved in the main mass. Swelling extended rather farther into abdomen on left side than on right, the left side of pelvis being free. On May 1st celiotomy was performed and a little serous fluid escaped from peritoneal cavity. Both ovaries were represented by large tumours of solid consistency and showing a nodular smooth surface, the right one being impacted in Douglas's pouch. Both tumours had a pedicle, which was easily ligatured, and both were removed. The uterus appeared to be irregular in shape and very hard in consistence. Wound closed. Healing by first intention. Patient was then transferred to gynaecological ward, where vaginal hysterectomy was performed. Microscopical reports: Ovaries showed columnar-celled carcinoma, possibly secondary to intestinal growth. Uterus showed no evidence of malignancy, the tissue being oedematous fibro-myoma. Patient was discharged well on June 11th.

#### *Fatal cases.*

1. *Carcinoma of ovary; exploratory caliotomy.*—M. S.—, female, æt. 77, married. For a considerable time swelling of abdomen had been noticed. Three weeks before admission attack of acute pain in abdomen, and more severe attack six days ago, with frequent vomiting and absolute constipation. On admission abdomen was tense and uniformly distended. No definite mass could be found on palpation. Most severe pain was present on left side of pelvis. No shifting dulness in flanks, but impaired resonance all over abdomen. Pulse 98 per minute, of fairly good volume, arteries greatly thickened. Respirations 28. Immediate exploration was performed, the abdomen being opened through left flank, revealing abundant free fluid, which was blood-stained. Median incision was then made, but growths were found in omentum and adherent to pelvic colon, the condition being hopeless. Death occurred on the following morning. P.M.—Peritoneal cavity contained about one pint of recent blood. Right ovary was converted into a large mass of solid white growth, soft, but with little hæmorrhage into it. Left ovary small and nodular. Considerable number of enlarged glands along great vessels. Those along pelvic colon were enlarged and simulated a growth of bowel, but the lumen was free. Attached to great omentum near left end of transverse colon was a mass of soft and highly vascular growth as large as a billiard ball. Many small growths in substance of right cupola of diaphragm. Stomach, bowel, kidney, spleen, and liver free from metastases. Viscera wasted. Lungs closely adherent, with old apical adhesions. Pathological report Columnar-celled carcinoma of ovary and diaphragm.

2. *Squamous-celled carcinoma of ovary; pelvic abscess*.—H. M—, female, æt. 35, married. Family and past history unimportant. Six months before admission patient noticed some pain in left hip when walking about. She was six months pregnant at the time, but the pregnancy went on to full term, and the child was healthy. Three months before admission the pain increased in severity. A diagnosis of sciatica was made, and patient was treated accordingly. Fourteen days before coming to hospital a lump was noticed in left iliac fossa, and this was observed to be increasing in size. Loss of weight observed for three months. On admission, a firm, flat swelling was felt in left iliac and hypogastric regions, reaching three inches above Poupart's ligament, fixed to the deep structures of the false pelvis, and yielding slight fluctuation on firm pressure. Mass was only slightly tender. Rectal examination negative, *per vaginam* uterus was felt to move freely, and ovaries could not be distinguished. Spine normal, left hip-joint quite movable, though movements produced pain. Patient lay on left side with thigh and leg semi-flexed. Incision made over swelling on 12th day revealing an abscess-cavity filled with non-offensive pale yellow pus. Abscess was beneath the fascia iliaca. Temperature before operation had occasionally risen to 101°, but after operation it was only slightly above normal. Discharge continued to be abundant for nearly six weeks, when further exploration was performed. The wound was enlarged, and the walls of the abscess-cavity were found to be composed of firm, white growth. A portion of this was removed for examination, and the wound was drained. Hectic temperature persisted with no interruption for four months, and the only event of note in the after-history was a rather profuse secondary hæmorrhage three weeks after second operation, and also presence of pus in urine. The hæmorrhage was controlled by plugging of wound, but the discharge was afterwards occasionally coloured with blood. Persistent pyrexia and progressive asthenia. Death rather more than five months after admission. Microscopical report: Carcinoma in some portions distinctly squamous, in others spheroidal. P.M.—Extreme emaciation. A mass of whitish growth the size of a hen's egg adherent to left pelvic brim. The healthy Fallopian tube was stretched over the front of it, while the pelvic colon was closely adherent but not invaded. Beneath the growth was a large broken-down mass representing the abscess found at operation. This infiltrated the psoas muscle, and had been opened just internal to left superior iliac spine. Lymphatic glands along common and external iliac arteries were filled with growth. Acute cystitis present, the abscess having opened into bladder a short distance behind the trigone. The ureter traversed the back of abscess, and there was slight left hydro-nephrosis. No other metastases. Other viscera practically healthy.

*Carcinoma of omentum*.—Female 1.

*Treatment*.—Exploratory cœliotomy; previous gastro-jejunostomy for supposed carcinoma of pylorus; tumour not felt at present operation.

*Carcinoma of skin and spine*.—Female 1.

*Treatment*.—Nil.

*Carcinoma of thyroid*.—Male 1, females 3. All encapsuled growths, clinically adenoma.

*Treatment*.—Enucleation in all.



*Carcinoma of lip.*—Males 8. Readmission 1; recurrent locally 2; recurrent locally and in glands 1.

*Treatment.*—Excision 6; neurectomy of inferior dental nerve 1; nil 1.

*Carcinoma of tongue.*—Males 19. Readmission 1. Recurrent in glands 3; recurrent locally and in glands 1. Died 1.

*Treatment.*—Partial excision of tongue 9; buccal route 6; splitting of cheek 1; Langenbeck 1; Symes-Kocher 1; preliminary laryngotomy 1; preliminary tracheotomy 1.

*Fatal case.*—*Carcinoma of tongue; excision.*—P. McD—, æt. 52, male, labourer. Family history negative. No history of venereal disease, moderate drinker, heavy smoker, using clay pipe. The soreness of tongue noticed 2 months; swelling in neck 4 months. Occasional pain referred to region of left ear. Some difficulty in swallowing for 2 months previous to admission, during which time patient had lost weight. On examination tongue imperfectly protruded; extensive induration felt extending from left molar teeth, where fissure was present across body of tongue to opposite side, involving left tonsil and pillars of fauces. Considerable enlargement of submaxillary and deep cervical glands on left side. Examination under anæsthetic on 12th day revealed that epiglottis was not involved. Operation 3 days later. Preliminary tracheotomy. Median incision made through lip down to symphysis and continued to anterior border of sterno-mastoid; glands removed from both submaxillary and anterior triangles; symphysis then sawn through; rami held apart and tongue removed down to hyoid bone with left tonsil and pillars of fauces. Aperture into pharynx partially closed by suture of soft structures to hyoid bone and epiglottis; jaw reunited by wire, and drainage of wound with plugs after dusting with iodoform powder. Condition after operation fairly good. Feeding by means of nasal tube. Pulse-rate 100. Tracheotomy tube removed on 2nd day and condition remained good for succeeding 48 hours, when patient began to suffer with cough and continual pain. Oxygen was administered, and also strychnine, but discharge from wound became very offensive. Temperature steadily rose and patient sank rapidly, death occurring 6 days after operation. Microscopical report: Squamous-celled carcinoma. P.M.—Tissues in neighbourhood of wound sloughy and offensive. No residual growth or infected glands found. Both lungs packed with broncho-pneumonic islets, smelling badly. No abscesses had formed. Heart friable and pale. No valve lesions. Liver large and fatty; kidneys showed recent epithelial changes; spleen large, red, and soft.

*Carcinoma of floor of mouth.*—Males 8. Died 1. Recurrent locally 1.

*Treatment.*—Excision 6, with portion of lower jaw in 3 cases. Glands also excised in 3 cases. Previous excision of glands 1; subsequent excision of glands 1.

*Fatal case. Carcinoma of floor of mouth; excision; abscess of buttock.*—J. F—, male, æt. 60, blacksmith. Three months history of sore in floor of mouth, with increasing ulceration, pain, and dysphagia. On admission ulcer present beneath anterior part of tongue; edges hard, everted, and irregular, floor dirty, base and surrounding tissues greatly indurated. Tongue could not be protruded beyond line of teeth. Enlarged glands present in right sub-

maxillary triangle. Glands excised on ninth day, and anterior portion of tongue with growth and floor of mouth excised by intra-buccal route ten days later. Temperature after second operation 103°, pulse 108, and general condition not good. Large abscess discovered in right buttock, and opened on 25th day. Temperature remained about 102° after this incision, though drainage was free, and redness suggestive of erysipelas was noticed around wound in buttock. Patient became steadily worse, and death occurred at end of 6th week, septic diarrhoea having been present for 4 days before death. Microscopical report: Squamous-celled carcinoma of floor of mouth, no evidence of new growth in glands. P.M.—Dense apical adhesions covering scars of old tubercle. Lungs were also broncho-pneumonic and gangrenous, with slight superjacent pleurisy. One enlarged gland found low down by side of trachea. Liver fatty, kidneys granular. Ragged abscess cavity in buttock, with small unopened abscesses in neighbouring intermuscular planes. Pathological report of cervical gland: Squamous carcinoma.

*Carcinoma of pharynx.*—Males 5; females 1. Died 3.

*Treatment.*—Excision with preliminary laryngotomy 1; gastrostomy 3.

#### *Fatal cases.*

1. *Carcinoma of pharynx and deep cervical glands; excision of growth and glands.*—S. F.—, male, æt. 44, labourer. Family and past history negative. Seven months' history of dysphagia, first causing sensation as of small foreign body at back of throat. Difficulty progressive, with increasing pain, fluids producing considerable pain. Some hoarseness of voice observed. On admission, swelling present on side of epiglottis extending up to left tonsil, soft on palpation, but with two harder nodules close to posterior faucial pillar. Glands not readily felt, but resistance on right side at level of hyoid bone. Operation on 4th day. Laryngotomy was performed, and immediately after introduction of tube pulse failed and patient stopped breathing. Artificial respiration restored patient's condition, and operation was continued. Pharynx was packed with marine sponge. Sub-maxillary, salivary, and lymphatic glands were removed, together with deep cervical gland, and the pharynx was opened above the cornu of hyoid bone. Growth exposed and removed with scissors. Pharyngeal wall sutured with silk. Wound partially closed and drained with gauze plug. Patient's condition at end of operation fairly good, but four hours later pulse suddenly failed and patient died. P.M.—Suspicious nodule found remaining in soft palate, and hard cervical gland on side opposite to that involved in operation. Lungs bulky, with right apical adhesions. No pulmonary embolism. No evidence of tuberculous or malignant invasion of lung. Heart-muscle good, valves and coronary arteries healthy. Brain showed slight œdema, but was otherwise normal; other organs healthy. Pathological report: Gland showed squamous-celled carcinoma, lung showed intense congestion and œdema. Numerous streptococci present.

2. *Carcinoma of pharynx.*—W. D.—, æt. 62, male, labourer. Family history good. Six months before admission patient first noticed the throat was sore and solid food was swallowed with difficulty. Fluid diet only for 3 months and loss of 2 to 3 stone during this period. On admission a large fungating

growth extending over left tonsil to lateral part of soft palate and lateral pharyngeal wall. Enlarged gland beneath angle of jaw. Gastrostomy on 2nd day by modified Kader-Senn method. Progress uneventful until 9th day, when temperature rose to 102·8°, and pulse, which had previously been 80, became 110, respirations increasing from 20 to 32. Some pain in chest was complained of, and 3 days later there was dulness on percussion of the lower half of right lung posteriorly with distant tubular breathing, and a few crepitations. Sleep greatly interfered with. Nutrition maintained by fluids through gastrostomy tube and milk and brandy by the mouth. Temperature remained between 100° and 102°, and on 16th day breath-sounds were fainter than before; vocal fremitus and resonance were absent and the area of dulness over right lung was increased. Some diarrhoea was present, the fever persisted, and respirations varied between 36 and 40. Death on 23rd day. P.M.—Profound emaciation. Growth in pharynx involved soft palate, left tonsil, and pillars of fauces. Growth had only extended beneath the mucous membrane in one or two places. Right pleural cavity contained 50 oz. of odourless pus, localised by adhesions. Right lower lobe collapsed and airless. Left pleura healthy, lung oedematous. Kidneys showed chronic interstitial nephritis. Pathological report—Squamous-celled carcinoma.

3. *Carcinoma of pharynx.*—J. W. B—, æt. 58, male, labourer. Family history good. Patient had lateral lithotomy performed when a boy. Good health until 10 weeks before admission, when patient swallowed a piece of bread and it regurgitated into his mouth and was blood-stained. In a fortnight he was compelled to give up solid food. Not much pain present till another fortnight had elapsed, when he noticed pain over right side of head and angle of jaw. Progressive loss of weight, troublesome nocturnal cough, with some increasing huskiness of voice. On admission emaciation marked. Ulcerated growth observed at back of pharynx involving left tonsil. Hard edges and offensive discharge. Vocal cords moving well, though slight swelling present in arytenoid region. Hard enlarged glands present on both sides of neck. Gastrostomy by Kader-Senn method through left rectus. Profound shock towards end of operation relieved by hypodermic injection of strychnine. Rallying power of patient very slight, temperature irregularly high, rapid and weakening pulse, death occurring 2 days after operation. P.M.—Gastrostomy opening found near great curvature, about 2 inches from pylorus. Growth in pharynx almost occluded its cavity. Epiglottis not involved. The middle and lower lobes of right lung were in a state of pneumonic consolidation in stage of red hepatisation. Rest of lungs congested and oedematous. No secondary growths. Other organs wasted, but not noticeably diseased.

*Carcinoma of larynx.*—Males 4; female 1. Readmission 1. Died 1.

*Treatment.*—Partial laryngectomy 1; removal for microscopy 1; inoperable 4.

*Fatal case.*—*Carcinoma of larynx; deep cervical glands; partial laryngectomy, with excision of glands.*—W. F—, æt. 48, male, railway porter. Family history negative. Previous history negative. Ten weeks before admission a feeling of something forming in the throat. No dysphagia; no marked alteration in voice. Treated for one month before admission in Out-patient Throat Department. Slight improvement during treatment with potassium iodide. No

history of syphilis. On admission laryngoscopic examination revealed swelling on outer side and towards posterior part of right ary-epiglottic fold. Hard gland observed beneath right sterno-mastoid at level of hyoid bone the size of a large almond. Superficial white ulcer observed on right anterior faucial pillar with irregular margin and fixed base. Operation on 9th day, Deep cervical glands first excised and then tracheotomy performed, a Hahn's tube being inserted. Horizontal incision was made through thyro-hyoid membrane and growth was found to occupy right pyramidal fossa; the upper half of thyroid cartilage, together with right half of epiglottis and tip of right arytenoid, were removed together with growth, which extended over about one square inch, was half an inch in thickness, and markedly ulcerated. Wound partially closed and Hahn's tube replaced by Durham's tracheotomy tube. Patient stood operation well, but temperature rose above 100° within 12 hours and remained at this level until death. Feeding was carried out by rectal enemata for 3 days and then by means of œsophageal tube. Patient's strength persistently failed, and even attempts to cough were unsuccessful, death occurring on 6th day after operation. Microscopical report—Squamous-celled carcinoma of laryngeal growth and gland. P.M.—Site of operation infiltrated with putrid cellulitis. Pleuræ healthy. Lungs broncho-pneumonic, with large softening islets with offensive odour. Liver enlarged and fatty; spleen dark and soft; kidneys slightly swollen. No secondary growths found.

*Carcinoma of œsophagus.*—Males 9; females 2. Died 2.

*Treatment.*—Gastrostomy 8; Kader-Senn 7; Frank 1.

*Fatal cases.*

1. *Carcinoma of œsophagus; gastrostomy.*—G. S., æt. 45, male, ostler. Family and past history negative. Two months before admission first noticed pain in middle of chest. This lasted ten days and was followed by hoarseness of voice and slight dysphagia. This condition progressed, and for the month preceding admission patient had lived on fluids. Pain had disappeared. Loss of rather more than a stone in weight during two months. On admission, slight inspiratory stridor with severe cough present, sputum on several occasions being tinged with blood. X-ray examination revealed fluffy shadow on left side at level of third costal cartilage. Gastrostomy performed on transfer to surgical ward by Kader-Senn method. Condition for six days remained good, but breathing was observed to be rather difficult, interfering with sleep. On 7th night patient vomited four times, and respiration became embarrassed and death occurred. P.M.—Mouth and fauces healthy. Great difficulty in stripping thoracic viscera from front of spine in neighbourhood of fourth dorsal vertebra. Both pleuræ extensively obliterated by old firm adhesions. A malignant ulcer was present in œsophagus, involving two thirds of its circumference immediately above bifurcation of trachea. The growth had exposed the bifurcation and it had invaded and perforated the left bronchus at its commencement in two places. It was also apparent that a neighbouring part of the descending aorta was infiltrated and the growth had surrounded the left recurrent laryngeal nerve in this situation. Vertebral glands not noticeably enlarged. Left lung extensively broncho-pneumonic in its lower two thirds, and at posterior part of base was a cavity containing offensive purulent matter and of irregular shape. The cavity

admitted the end of the thumb and had infected the overlying left pleura. Right lung œdematous and emphysematous. No other growths found. Pathological report: Œsophageal growth, squamous-celled carcinoma, slight invasion of outer wall of aorta.

2. *Carcinoma of œsophagus.*—E. S—, æt. 63, female, married. Family and past history negative. Dysphagia, with frequent regurgitation of food for seven months. Rapid loss of weight, no definite vomiting, and no hæmatemesis. Œsophageal bougie could be passed only as far as level of cricoid cartilage. No evidence of mediastinal tumour or pressure on œsophagus from without. Patient remained fairly well on a fluid diet for several days and then developed troublesome cough, condition gradually becoming worse. Pulse throughout had been feeble and condition too bad to warrant severe operation. Death occurred on 16th day. P.M.—Extreme emaciation. Large growth filling up most of the lumen of the œsophagus at the level of cricoid cartilage, extending one inch in longitudinal direction. Deeper coats of œsophagus showed no naked-eye change. Larynx and trachea were healthy. Pleuræ showed adhesions on both sides, and lungs some congestion and œdema. All other organs small and wasted. Pathological report: Œsophagus, squamous-celled carcinoma with considerable inflammatory reaction; lungs showed catarrhal pneumonia and bronchitis with numbers of streptococci present.

*Carcinoma of antrum and superior maxilla.*—Males 3; females 3. Recurrent locally 2.

*Treatment.*—Excision of upper jaw 4; excision of recurrent nodule 1.

*Carcinoma of pinna.*—Males 3. Died 1. Recurrent in cervical glands 2.

*Treatment.*—Excision in all.

*Fatal case. Carcinoma of pinna and deep cervical glands; operation: tuberculous broncho-pneumonia.*—P. K—, æt. 75, male, shoemaker. Family history negative. Seven months before admission small growth observed on upper surface of right pinna. Gradual increase in size, with slight ulceration, producing considerable pain in both ear and head for four months. Slight decrease in size before admission. Small growth was present at upper part of right pinna 1 in. in length and  $\frac{1}{2}$  in. across, exhibiting superficial ulceration covered by scab. One enlarged gland felt beneath lobule of ear. Urine 1006, cloud of albumen present. Growth excised on 6th day; gland not removed. Convalescence uneventful. Microscopical report: Squamous-celled carcinoma. Discharged on 18th day. Readmitted two months later. No signs of recurrence in auricle. Large hard mass felt below and behind right ear fixed to the skin, which was red and shiny over it. No other enlarged glands. Pain severe. On 3rd day glandular mass was excised together with its skin covering. Parotid gland found to be involved and was therefore removed with growth, the facial nerve being divided. For four days after operation, with the exception of some fever, patient's condition was good, but at the end of this period severe hiccough made its appearance, persisting for sixty hours unrelieved by applications to epigastrium. Wound suppurated: hiccough was uninfluenced by treatment, pulse became rapid and feeble, and death occurred on 11th day. Microscopical report

on gland: Squamous-celled carcinoma. P.M.—Marked emaciation, no evidence of remaining growth. Right lung was fibroid and densely adherent in its upper lobe to parietal wall of thorax. Left lung very large and riddled throughout with tuberculous broncho-pneumonia, the bronchi being loaded with thick mucopurulent secretion. Heart healthy, kidneys showed well-marked interstitial nephritis with thickening of arteries.

*Carcinoma of face.*—Male 1; female 1. Outer canthus 1. Secondary to lupus, treated with Finseu rays 1.

*Treatment.*—Excision in all. Thiersch grafting 2.

*Carcinoma of forehead.*—Local recurrence; female 1.

*Treatment.*—Excision.

*Carcinoma of thigh.*—Female 1.

*Treatment.*—Excised and grafted.

*Carcinoma of sole of foot.*—Female 1. Papilloma present for 30 years. Microscopy revealed early malignancy.

*Treatment.*—Excision.

*Carcinoma of bladder.*—Male 1; females 2. Died 1.

*Treatment.*—Removal *per urethram* 2; partial removal for microscopy 1.

*Fatal case.*—*Carcinoma of bladder; supra-pubic cystotomy.*—J. G.—, *æt.* 50, male, hairdresser. History of syphilis 25 years ago. Stricture of urethra for 20 years. Occasional difficulty and pain in micturition during last 7 years, relieved by passage of catheter by patient. Three weeks before admission difficulty and pain in micturition of severe degree were observed, and blood frequently passed at end of micturition. On examination some pain was caused by palpation over pubes. Bladder not distended, prostate felt to be markedly enlarged on rectal examination. Urine strongly alkaline, phosphates abundant, blood present; no cells pointing to new growth seen. Lavage of bladder produced slight degree of improvement, but urine continued to contain blood and patient slept badly owing to considerable pain. Bladder opened by supra-pubic incision on 9th day. Wall found to be infiltrated with growth; supra-pubic drainage. Pain was relieved by operation and drainage of urine was efficient. Abscess in right ischio-rectal fossa was incised and drained on 24th day. Supra-pubic wound was observed to be occupied by growth from bladder-wall and patient died 5 weeks after operation. Microscopical report: Carcinoma. P.M.—Marked emaciation. Wall of bladder and subcutaneous tissues at site of operation one solid mass of breaking-down growth. All pelvic tissues densely infiltrated with new growth with involvement of retro-peritoneal glands. Wall of bladder 1 inch thick, uniformly invaded. Prostate of great size with dense infiltration. Ureters dilated, and on left side moderate degree of hydronephrosis. On the right side kidney was pyonephrotic and showed suppurative nephritis. Ureters patent and obstruction due to considerable obliteration of cavity of bladder. The rectum was not affected. Lungs atrophic. Pleuræ showed dense adhesions from apex to base on both sides with numerous calcareous plaques. Heart rather dilated on right side, valves healthy. Early atheroma of ascending aorta.

*Carcinoma of penis.*—Males 2.

*Treatment.*—Pearce Gould's operation, with removal of glands, 1; amputation of penis 1.

*Carcinoma of vulva.*—Female 1.

*Treatment.*—Excision.

*Carcinoma of buttock and perineum.*—Female 1.

*Treatment.*—Excision.

*Carcinoma of inguinal glands.*—Male 1. Primary growth not located.

*Treatment.*—Incomplete removal.

*Carcinoma of urinary fistula.*—Male 1. Operation for ectopia vesicæ in 1887, persistent sinus ever since with recent funnel-shaped epitheliomatous ulceration around it.

*Treatment.*—Nil.

*Rodent ulcer.*—Males 3; female 1.

*Situation.*—Ala nasi 3; thigh 1, recurrent locally.

*Treatment.*—Excision in all.

*Sarcoma.*

*Sarcoma of soft parts; skin.*—Males 3, females 6. Died 1.

*Situation.*—Breast 2; chest 1; loin 1; arm 1; leg 1; face 2; diffuse sarcomatosis of skin 1, fatal case. Alveolar melanotic growths 4. Round-celled 2; spindle-celled 1; fibro-sarcoma 1. Growths also in kidney and pancreas 1, fatal case.

*Treatment.*—Excision 7; glands also excised 1; nil 2.

*Fatal case. Diffuse sarcomatosis of skin; sarcoma of pancreas and kidney.*—W. E—, male, æt. 37, engineer's machinist. Family history good. Influenza ten years ago. No history of venereal disease, patient stating that he had never run the risk of infection. Wife and children all perfectly healthy. Two years before admission skin eruption was observed on left leg. This remained for six months and then disappeared. From time to time eruptions have appeared on different parts of the body, and these have persisted. On admission the entire surface of patient's body, with the exception of the palms of hands, was covered with sores, least marked on the face, the hands, and the feet. The palms showed staining. The eruption consisted of circular, shallow ulcers, covered in most cases by conical crusts; the ulcers varied in size up to an inch in diameter. In many places they had become confluent. All had greyish bases and indurated margins. They were limited to the skin, and did not extend into deeper tissues. Where ulcers and crusts were not present the skin was marked by patches of brown pigmentation. One ulcer, exactly like the rest, was present on the under surface of penis, a little posterior to position of corona, involving the skin only. A diagnosis of secondary syphilis was made, the lesions being regarded as rupial. Anti-syphilitic treatment was administered, both mercury and iodide being given in full doses, but very little improvement was observed in the eruption, and patient steadily grew weaker; fever of slight degree was present in last two weeks of life, and death occurred at the end of five weeks. P.M.—Ill-nourished

body. Upper air and food passages normal. Right pleura obliterated by adhesions. Lungs congested and cedematous. Peritoneum normal. Liver enlarged and tough. Spleen enlarged. Kidneys swollen and red, not lardaceous. Adrenal bodies twice the normal size and unduly tough; the cortical portion was thickened and white instead of yellow; the central portion was firmer and paler than usual. A rounded tumour was present in body of pancreas near its tail. The cut surface of this was not uniform, the centre being translucent. Small ulcer present in upper part of duodenum. A small nodule was found in one kidney. Pathological report: Nodule from kidney, round-celled sarcoma; tumour of pancreas also round-celled sarcoma.

*Sarcoma of glands.*—Males 1; females 2. Died 1. Inguinal 1; cervical 2. Melanotic spindle-celled 1. Round-celled 2. Erysipelas 2 (see Special Table III).

*Treatment.*—Excision in all.

*Fatal case. Melanotic spindle-celled sarcoma of left inguinal glands; erysipelas.*—E. C—, female, *æt.* 60, married. Family and past history good. Four months before admission a small lump was noticed in left groin which gave rise to some smarting pain. Growth gradually increased in size and began to ulcerate three weeks before admission. On examination, a rounded, irregular ulcer was present in left groin about the size of half a crown, edges hard and everted, base covered with foul-smelling slough. Surrounding tissue indurated and purplish-black in colour. Small ulcer just above this; subjacent glands enlarged and hard, but still movable. Base of ulcer was movable over subjacent structures, but it bled freely on palpation. The growth and glands excised on 6th day. Wound washed with saline and partially closed. Suppuration observed on 5th day. Erysipelas arose round wound on 11th day. Patient transferred to Block 8; temporary improvement for one week; at the end of this time leg was swollen, but the wound looked cleaner. Temperature on 18th day rose to 103°, and persisted between 100° and 103° for five days, when death took place. Microscopical report: Melanotic spindle-celled sarcoma. P.M.—Heart showed atheroma of mitral and aortic valves. Aorta markedly atheromatous. Intestines everywhere matted together by adhesions of some standing. Pigmented metastases scattered throughout liver and present also in aortic glands. Other organs normal.

*Sarcoma of pylorus.*—Male 1, died. Round-celled.

*Treatment.*—Pylorectomy and posterior gastro-jejunostomy. Death from shock.

*Fatal case. Sarcoma of pylorus; pylorectomy; posterior gastro-jejunostomy.*—G. W. S—, *æt.* 64, male, blacksmith. Four months' history of pain after solid food, usually persisting for three to four hours after meals. Loss of weight during this period. No history of vomiting. On admission, abdomen not distended, no pain or tenderness on palpation, which did not reveal the presence of any tumour. Tongue clean. Test meal showed absence of free hydrochloric acid and presence of some lactic acid. Celiotomy to right of linea alba. A growth found at pylorus extending into first part of duodenum. Growth movable with exception of adhesions to head of pancreas. These adhesions were separated from duodenum and the latter was divided well below the limits of the growth just above the duct of Wirsung. The lower end was sutured. Stomach



was then divided on proximal side of growth and the opening closed. The growth with pylorus and portion of duodenum was then separated from head of pancreas and operation concluded by performance of posterior gastro-jejuno-stomy. A cigarette drain was passed down to head of pancreas on account of oozing, and wound was nearly completely closed. Condition after operation poor, no power of recovery exhibited, state of collapse persisting until the morning of next day, when death occurred. Microscopical report: Round-celled sarcoma. P.M.—Some emaciation. No sign of peritonitis and no free blood in abdominal cavity. All the growth appeared to have been removed; no secondaries were found. The suturing of intestine was sound and resisted considerable water pressure. Anastomosis was well placed and appeared efficient. Lungs markedly congested but no consolidation present. Well-marked perilieneitis. Other organs healthy.

*Sarcoma of parotid.*—Female 1.

*Treatment.*—Nil; inoperable.

*Sarcoma of mons veneris.*—Female 1, died. Melanotic alveolar sarcoma. Erysipelas.

*Treatment.*—Excision.

*Sarcoma of mons veneris; excision.*—R. B—, female, æt. 28, female, parlour-maid. Family history negative. One year before admission small sore noticed on mons veneris. Gradual increase in size, rapid growth in last six weeks, with pain. On admission a raised purple-coloured ulcerated growth about 1 inch in diameter situated on the mons veneris at the junction of labia majora. Base indurated, but attached only to skin. Inguinal glands enlarged on both sides. Excision of growth, with clearance of both inguinal regions on 7th day. Wound swabbed with zinc chloride and drained. All tissues removed showed deep pigmentation. Post-operative rise of temperature on second day to 101°, falling to normal on 3rd day. Progress of case uneventful, except for slight occasional rises of temperature and abundant purulent discharge, until end of 4th week, when numerous black patches were observed around wound, and temperature rose to 101°, respirations became 44 per minute; auscultation, however, revealed no physical signs in chest. On the 31st day temperature suddenly rose to 105°, and an erysipelas rash appeared around wound. In the course of next few days this rash spread widely over back and right thigh, while over a considerable part of the same area the skin became marked with numerous coal-black nodules due to metastasis. Temperature persisted above 101° for a week, when it rose again to 105°. The rash, however, ceased to spread, and the wound healed satisfactorily. The pigmentation of skin progressed, and on 49th day definite signs of pleural friction were found at base of right lung. During this period there was persistent fever, and patient's strength was failing daily. Black nodules appeared scattered almost all over the surface of trunk and limbs, the average size being that of a pea. These spots were also present on the scalp and face, the gums, and the inner canthus of one eye. Death occurred in the 15th week from progressive asthenia. Microscopical report: Alveolar sarcoma of growth of mons veneris and glands, showing melanin. Culture from the skin when the erysipelas eruption was present yielded growth of Gram-negative bacilli in large

numbers, a few staphylococci, and a few Gram-positive bacilli. No streptococci seen. The Gram-negative bacillus had characteristics of *Bacillus pyocyaneus*. P.M.—Marked emaciation. Skin on right thigh for an area about 9 inches by 5 inches was covered with papillomatous black growth. The distribution of metastases was almost universal, and pigmented growths were found on gums, tonsils, aryteno-epiglottidean folds, back of pharynx, and œsophageal wall. The rest of the intestinal mucosa had escaped. Larynx and trachea showed numerous nodules. Pleuræ, both visceral and parietal, were studded with closely-set white patches of growth. Pericardium similarly affected. Lungs invaded also at apices with white growth. Heart normal. Liver large and extremely fatty. Only one very small pigmented nodule present. Spleen large and friable, full of white growths. Peritoneum and retro-peritoneal glands widely invaded with non-pigmented deposits. Kidneys and pancreas normal. Large mass of white growth present at site of thymus gland.

*Sarcoma of testis.*—Males 3. Readmission 1. Lympho-sarcoma of testis 1 round-celled of epididymis 1. See also "Recurrent sarcoma."

*Treatment.*—Partial excision for microscopy 1; orchidectomy 2.

*Sarcoma of erector spinæ.*—Male 1. Spindle-celled.

*Treatment.*—Excision.

*Recurrent sarcoma of soft parts.*—

*Local recurrence in skin of cheek.*—Female 1. Melanotic.

*Treatment.*—Excision.

*Local recurrence in skin of leg.*—Male 1; female 1. Spindle-celled 1; alveolar melanotic 1. Multiple growths in 1 case.

*Treatment.*—Excision.

*Local recurrence in thigh.*—Male 1. Myosarcoma.

*Treatment.*—Coley's fluid.

*Recurrent sarcoma of brachial plexus.*—Female 1; died.

*Treatment.*—Amputation of arm with partial excision of growth.

*Sarcoma of brachial plexus, recurrent locally; amputation of arm, recurrent hæmorrhage.*—R. M—, female, æt. 31, married. Shooting pain through right arm and hand first noticed 20 months before admission. Shortly afterwards a swelling was observed in right supra-clavicular triangle on right side. Tumour excised at National Hospital for Paralysed and Epileptic 7 months before admission. Recurrence 4 months later with increasing pain in shoulder and down right arm. On admission, a large, rather hard swelling, situated in front of right clavicle and extending upwards into posterior triangle and downwards towards axilla. Outline irregular; tumour very tender on palpation, the tenderness extending widely over skin beyond margin of growth. Site of former operation healed soundly and not specially involved in growth. Right arm frequently bathed with sweat. Skiagram showed no lesion of bone. Treatment by drugs and local applications failed to relieve pain, therefore operation was undertaken on 21st day and the arm was amputated through the clavicle and acromion process. The growth was found to be of very friable nature surrounding the cords of brachial plexus and the axillary vessels. Considerable bleeding

occurred during operation and intravenous infusion was performed. One strong ligature was passed round the brachial plexus artery and vein, while the vessels were also ligatured individually, but in spite of this it was necessary to close the wound over a large piece of gauze, allowing for drainage. About 4 hours after operation extensive hæmorrhage was observed from wound. This was re-opened and the ligature on the axillary artery was found loose. Fresh ligature was therefore applied, but patient stopped breathing, and artificial respiration, infusion with saline, stimulants, and needling of heart had no effect, and pulsation never returned. Microscopical report: Spindle-celled sarcoma infiltrating nerve-sheaths but not penetrating into the nerve bundles. P.M.—Heart normal; lungs contained many scattered secondary growths, white in appearance, and extremely soft. Pleuræ healthy. Abdominal organs healthy. All the roots of brachial plexus on the right side were found to be involved in the remains of soft growth. No invasion of veins had occurred. Several glands in posterior triangle were enlarged with growth. The primary mass had apparently originated from the interior of the nerve-sheaths, the fibres of the nerves being spread out over growth. Glands and lungs microscopically exhibited secondary deposits.

*Sarcoma of the testis, recurrent in abdominal viscera.*—Male 1, died.

*Treatment.*—Paracentesis abdominis; previous orchidectomy.

*Round-celled sarcoma of epididymis and testis.*—F. B—, æt. 16, male; machine-minder. Family and past history negative. Patient was admitted on December 30th, 1904, with a history of having knocked the lower part of the left testicle four weeks before admission. There was acute pain for a few minutes, and a week later testicle was observed to be swollen and the size of it increased rapidly, the swelling causing some pain. On admission a large swelling occupied left side of scrotum; the skin over it was tense and red. Tenderness present in lower part; the anterior part of swelling was fluid, and four days after admission this was tapped and about 2 oz. of blood-stained fluid were withdrawn. This relieved the tension and pain, but the tumour was little altered in size, and on palpation was found to vary in consistency in its different parts the whole being of considerable weight. On January 4th, 1905, the testicle was removed, and during the operation it was found that the tunica vaginalis was occupied by a hæmatocele; the body of the testis was nearly the normal size, while the epididymis and vas were converted into a firm white growth, continuous above with a mass felt in the abdomen. The cord was divided at the level of the internal ring, but the abdominal growth was not touched. Wound healed rapidly, but abdomen became progressively more distended, and on January 20th distension was so marked that respiratory movement was hardly perceptible. Dulness was present in both flanks and above pubes. The dulness was due to free fluid, and a thrill could be obtained. Paracentesis was performed on January 29th and 6½ pints of fluid were withdrawn. The fluid was alkaline, its specific gravity 1020; albumen and blood were both present; the cells were almost entirely small mononuclear cells. Relief of symptoms was obtained and patient was discharged on February 1st. Microscopical report: Round-celled sarcoma, the growth being very vascular, showing myxomatous degeneration. Readmitted on February 6th. Abdominal distension more marked than before.

Seven pints of fluid were withdrawn on day of admission, and leakage of fluid occurred for several days afterwards. The abdomen continued to increase in size, but the patient gradually became thinner and vomiting occurred on several occasions, death occurring on March 3rd, when symptoms of respiratory difficulty had been present for two days. P.M.—Emaciation. A hard nodule present in the left inguinal region infiltrated with growth. Abdomen contained 36 oz. of opaque fluid. All abdominal organs were covered with white growth. This occupied the great omentum, so that its thickness was 1 in. The intestines were covered with small nodules; the cæcum and transverse colon were greatly distended. The mesenteric and retro-peritoneal glands were large, and infiltrated with growth which in places showed mucoid degeneration and in others hæmorrhage. Numerous deposits in liver and on surface of spleen. Both kidneys imbedded in mass of growth extending from retro-peritoneal glands. The substance of left kidney was invaded, while the right appeared normal. Left pleura contained 40 oz. of clear fluid, and both pleuræ were studded with growths. Lung-substance was not invaded. Anterior mediastinal glands showed infiltration, as also did the left cervical glands. Brain normal, right testicle normal.

*Sarcoma of bone.*—

*Sarcoma of basis cranii.*—Male 1. Spindle celled.

*Treatment.*—Partial removal for microscopy.

*Sarcoma of mandible.*—Male 1, female 1. Both giant-celled. Symmetrical in one case.

*Treatment.*—Removal by incision and scraping in both cases.

*Symmetrical giant-celled sarcoma of mandible.*—S. P—, æt. 13, male, school. Admitted in August, 1904, with two years' history of swelling on both sides of lower jaw of somewhat rapid onset, without tendency to increase in size, causing slight degree of pain. Family history: mother stated to have similar swelling about jaw; sister in hospital at the same time with a similar lesion. On examination a hard, irregular swelling was observed on both sides of lower jaw at its outer and posterior aspect. The tumour apparently caused expansion of bone, and both second lower bicusps were absent. On the 13th day the tumour and adjacent bone on the right side was exposed by a semicircular incision over the inferior border of the mandible. Tumour was of soft, pulpy, consistence, situated between the two tables of the bone, causing great expansion of the outer table; there was apparently a dental rudiment in the upper part of the mass. The wound was closed, but suppuration subsequently took place. Microscopical report: Giant-celled sarcoma. Patient was discharged in September and readmitted for removal of the tumour on left side in October, 1904. It was found to be precisely similar, and the microscopical report was giant-celled sarcoma; very fibrous tumour. Patient was discharged at the end of ten weeks.

*Sarcoma of os innominatum and rib.*—Male 1. Inoperable.

*Treatment.*—Nil.

*Sarcoma of femur.*—Male 1, female 1. Giant-celled 1, lower extremity pathological fracture 1.

*Treatment.*—Amputation through thigh in both cases.

*Sarcoma of femur with inflammatory change; pathological fracture; amputation; recovery.*—J. K.—, st. 33, male, labourer. Family history of phthisis. At age of 8 patient had a suppurating cervical gland, but has been otherwise quite healthy; no history of syphilis. Pain in right leg referred especially to hip and knee for six months. Swelling noticed about middle of anterior aspect of right thigh for six weeks. Gradual increase in size, with great increase of pain and extreme local tenderness. The swelling was poulticed for some time. On examination a somewhat unhealthy-looking man, evidently in severe pain, with a large, prominent swelling about the middle of the thigh. Tenderness was so marked that examination was difficult, but the skin over the swelling was dusky and showed some dilatation of veins. It was tense and fluctuation was obtained. No enlargement of glands. Patient was anaesthetised, and on gentle flexion of hip under anaesthetic the femur fractured at site of swelling. Incision gave exit to a large amount of blood and blood-stained serum, with some clots. A cavity was entered with no definite wall except loose granulation-tissue. The fractured ends of the femur were found lying in posterior wall of the blood-cyst. Subsequent incisions were made on several occasions, and portions of the tissue were examined microscopically and stated to be only granulation-tissue. The urine was examined for Bence-Jones's proteid, but this was not present. The wound continued to discharge very offensive material; there was no attempt at union, and patient suffered from almost continuous pain. The skiagram suggested sarcoma, and a final microscopical report of sarcoma with large areas of tissue altered by inflammation was made. Amputation was performed by anterior and posterior flaps at junction of upper and middle thirds three months after admission. Patient suffered from considerable shock after operation, but subsequently made an uninterrupted recovery, and was discharged three weeks after operation, the stump having healed.

*Sarcoma of humerus, recurrent in deltoid.*—Male 1. Round-celled.

*Treatment.*—Re-amputation; interscapulo-thoracic.

*Sarcoma of humerus, recurrent in stump after amputation.*—A. B.—st. 14, male, school. Spence's amputation was performed for round-celled sarcoma of humerus in November, 1904, and patient was discharged at the end of a fortnight. Seven weeks before admission in February, 1905, a small lump had been noticed in the stump, gradually increasing in size. On examination a large rounded mass representing the enlarged stump of previous operation was found beneath the skin. It was freely movable, and its size was that of a tennis ball. No evidence of glandular invasion. On 5th day the scapula and outer half of the clavicle were removed with the recurrent growth, which was entirely confined to the deltoid. Microscopical report: Round-celled sarcoma, no change in axillary gland. Wound healed by first intention. Discharged on 16th day.

#### ENDOTHELIOMATA.

*Endotheliomata.*—Males 5; females 2. Readmission 2. Eyelid 1; parotid 2; submaxillary 2. Endothelioma of appendix, see Appendix abscess. Erysipelas 1.

*Treatment.*—Excision in all.

*Recurrent endothelioma of eyelid.*—Male 1. Previous erysipelas around wound. Third local recurrence.

*Treatment.*—Scraping, and subsequent application of X rays.

*Recurrent endothelioma of eyelid.*—A. R.—, male, æt. 46, gardener. For 9½ years patient had a small, irregular ulcer, below left inner canthus, causing troublesome epiphora. Slight discharge was present, and the ulceration had recurred after three operations, the first 9 years ago, the second 6 years later, and the third 1 year before admission. Admitted on January 25th, 1905. Seven weeks previous to this patient had an attack of facial erysipelas, and after this the ulcer which had healed broke down again. A previous attack of erysipelas had occurred after the operation 12 months ago. On admission a deep-seated ulcer was present at inner canthus of left eye, with considerable swelling below the site of ulcer, which produced a slight discharge. No enlarged glands could be felt. The ulcer was treated by the application of X rays for 4 days and this caused the discharge to decrease. On February 6th the left globe was excised together with the ulcer and adjacent bone. The wound was partially closed with horse-hair sutures. Three days later erysipelas arose round the wound, spreading rapidly to nose and forehead. The rash faded on 4th day and the temperature became normal. Discharged 4 weeks after admission. Microscopical report: Endothelioma. The clinical diagnosis was "rodent ulcer." Re-admitted on March 15th for plastic operation to enable the wound to be partially closed. A further plastic operation was performed on May 22nd. On July 15th patient was readmitted for further local recurrence in the situation of the swelling previously mentioned below the ulcerated surface, the recurrence being observed shortly after plastic operation. On examination two small papillomatous growths were seen on the inner surface of upper and lower lids, the lower one being the larger. These were scraped, and the patient was discharged 4 days later. The patient has subsequently been treated by the application of X rays but these have produced very little good result.

#### SIMPLE TUMOURS.

*Lipoma.*—Males 10; females 13. Scrotal 1, after radical cure of irreducible omental hernia.

*Treatment.*—Excision in all.

*Myxoma.*—Female 1. Myxo-lipoma.

*Treatment.*—Excision. Erysipelas and thrombosis followed operation.

*Fibroma.*—Males 2. Recurrent epulis 1. External popliteal nerve 1.

*Treatment.*—Excision in both cases.

*Chondroma.*—Female 1. Phalanx of hand.

*Treatment.*—Excision.

*Osteoma.*—Males 8; females 3. Readmission 1.

*Situation.*—Hallux 4; femur 2; scapula 1; thigh 2; humerus 1; multiple 1.

*Treatment.*—Excision.

*Neuro-fibroma.*—Males 1; females 2. Amputation stump 1. Breast 1.

*Treatment.*—Excision.

*Hamangioma.*—Males 1; females 6. Readmissions 3.

*Treatment.*—Excision 2; electrolysis 14.

*Adenoids.*—Males 18; females 15. Hypertrophied tonsils 19. Turbinal hypertrophy 2. Deflected septum 1.

*Treatment.*—Curettagé in all; also tonsillotomy 19.

*Papilloma.*—Males 4; females 5. Readmission 1.

*Situation.*—Duct papilloma of breast 2; larynx 4; cheek 1; hallux 1; nævo-papilloma of dorsum of hand 1.

*Treatment.*—Laryngeal cases: Endolaryngeal removal 1; subglottic removal 1; scraping 1. Excision of breast 1; amputation of breast and clearance of axilla 1. The rest excised; Thiersch grafting in two cases.

*Adenoma.*—Females 11. Breast 10; suprarenal 1.

*Treatment.*—Lumbar nephrectomy 1. Excision 10.

*Adenoma of suprarenal capsule, lumbar nephrectomy.*—M. A. H—, *et.* 52, female, married. Family history good. Rheumatic fever at age of 16; small-pox shortly afterwards. Nine weeks before admission patient noticed pain in left side over region of kidney. The pain was very severe and occurred in frequent attacks. Blood was also noticed in the urine, sometimes bright red and at other times dark in colour. Frequency of micturition was present, the bladder being emptied twenty times during some days. Scalding pain was felt during the act of micturition. Occasionally long thin clots were observed in the urine. The pain was at times referred to the left groin. On examination, a very stout, healthy-looking woman, with constant pain in left loin. On palpation an indefinite tumour was felt in this region and assumed to be the enlarged left kidney. Urine: Specific gravity 1024, acid, containing albumen and blood in fair quantity, with some pus. No sugar present. No tubercle bacilli present. X-ray examination was impossible owing to stoutness of patient. Operation on ninth day. A long renal incision was made parallel to and just below the twelfth rib. The kidney capsule was incised and the kidney examined with the finger. Some thickening was felt in neighbourhood of pelvis of kidney, and a portion of this was removed with forceps and presented the appearance of new growth, and this was found to form a sessile projection into the renal pelvis about the size of half a walnut. Nephrectomy was decided upon, and the kidney was removed, together with a large growth at its upper pole and another on a level with the renal pelvis. Both these growths were intimately connected with the renal tissue. The wound was drained by means of a tube. Condition of patient after operation was good. The next day urine was thick, opaque, and chocolate-coloured, containing a large amount of blood. Tube removed from wound on third day. Amount of urine passed after operation was 19, 18, 15, 17, and 16 ounces respectively on 2nd, 3rd, 4th, 5th and 6th days. On this last day it was free from blood and albumen. From this time onward the amount increased; on the seventh day 26 oz. were passed, and on tenth day the amount was over 50 oz.; it then fell gradually to about 35 oz. as the daily average. It remained acid in reaction, and no blood or albumen was again found. Wound healed rapidly, and patient was discharged on 32nd day. Pathological report: Adrenal adenoma and possibly also adenoma of kidney.

*Granuloma.*—Males 2; females 4. Tuberculous 1; syphilitic 1.

*Situation.*—Gum 1; palate 1; septum nasi 1; cheek 1; pubes 1; beneath operation scar 1.

*Treatment.*—Excision in all.

### CYSTS.

See Table I for varieties and numbers of cysts.

*Hydatid.*—Females 2. Died 1. Both subperitoneal cysts of liver.

*Treatment.*—Incision and drainage in both.

*Fatal case. Hydatid cyst of liver, sub-peritoneal; incision and drainage of cyst.*—R. G—, female, æt. 43, shopkeeper. Previous history of Raynaud's disease 7 years ago; right hemiplegia of 3 days' duration 1 year before admission. Previous treatment on Medical side for sudden attack of aphasia 6 months ago. Apical presystolic and systolic murmurs present, with slight weakness of muscles on right side of face and tongue. Slow improvement was observed in aphasia, but since discharge patient has been subject to continuous severe headache and vomiting. Ten days before admission severe attack of pain in right lumbar region radiating to back between shoulders. When admitted on Medical side, March 20th, 1905, abdominal movements were bad, and there was diffused abdominal tenderness, especially marked in right hypochondrium. Dulness on percussion in left flank resonant over rest of abdomen. Liver edge felt just below costal margin. On April 5th a mass was felt below the liver beneath the 9th right costal cartilage. Diarrhoea was present, and temperature showed daily increases to 101°. On transfer to Surgical side, April 25th, liver margin was felt 1 in. below costal arch in right nipple line and just to left of this was a hard, nodular mass the size of a hen's egg, continuous with liver edge and dulness. Not markedly tender, no jaundice present. Abdomen opened on 2nd day through right rectus. Gall-bladder appeared somewhat tense and extended 1 in. below free margin of liver and short distance to the right of gall-bladder was seen a white hard mass flush with the surface of the liver. On tapping this with trocar and cannula, a few small cysts containing gelatinous fluid were withdrawn. Incision was enlarged, cyst cavity fully exposed by removal of large numbers of these gelatinous cysts, and the parenchyma was scraped away and the main cyst drained. Numerous hydatid hooklets were seen in fluid withdrawn. After operation, amount of discharge was profuse, purulent in character, with some bile and gelatinous material. General condition of patient poor. Heart began to fail in spite of cardiac stimulants and occasional attacks of dyspnoea were observed. Death occurred 26 days after operation. P.M.—Considerable matting of structures present in right hypochondrium. Small abscess found near fundus of gall-bladder communicating with wound. Gall-bladder small, no calculi present. Right lobe of liver occupied by old calcified hydatid cyst the size of small cocoanut projecting from inferior surface of liver. Transverse colon and second part of duodenum adherent to cyst wall. In the latter was a small circumscribed recent ulcer, no other hydatids discovered in peritoneal cavity. Kidneys the seat of marked interstitial change; arteries extremely thickened; numerous retention cysts. Heart increased in size, showing marked atheroma and stiffening of all segments of aortic valve. Mitral valve



sclerosed, the flaps being opaque, thickened, and adherent, the orifice admitting only the tip of first finger. Marked atheroma of aorta and of coronary arteries. Lungs congested and oedematous. The arteries at base of brain showed atheroma. A large patch of softening, greyish in colour, in the upper surface of anterior end of left temporo-sphenoidal lobe involving one half of its thickness was observed. A similar patch was present on under surface of left inferior frontal convolution involving Broca's centre. Terminal portions of four outer toes of each foot were blue in colour and mis-shapen. The large and small arteries of both legs were thickened, but in no place could thrombosis be detected.

*Ovarian cysts.*—Females 7; died 1. Twisted pedicle 2; multilocular 2; intra-ligamentous 2; ruptured 1; bilateral 2.

*Treatment.*—Removal in all cases. Subsequent cœliotomy and lavage for mucoid peritonitis 1.

*Fatal case.*—*Unilocular ovarian cyst; intra-ligamentous.*—E. M—, æt. 50, female, single. Family history and past history negative. Menstrual periods regular until 10 months before admission, since when they have been absent. One month ago pain and feeling of weight first observed in abdomen. Shortly afterwards distension in lower part was noticed. Swelling gradually increasing in size. On examination large rounded swelling found in abdomen, its most prominent part being to right of mid-line about level of umbilicus. Swelling smooth, elastic, and not tender, reaching 2 inches above umbilicus, where fairly definite margin could be felt. Tumour could be traced downwards into pelvis. Fluid thrill present. Percussion note over central part of swelling dull. Vaginal examination revealed retroverted uterus and swelling through left fornix and anterior vaginal wall. Urine normal. Cœliotomy on 6th day. Cyst was found to be in connection with left ovary, and had burrowed in broad ligament towards meso-sigmoid. Its contents were dark brown fluid and its walls showed pigmentation. The cyst was removed with considerable difficulty, and hæmorrhage was abundant. The abdomen was closed. Condition after operation was bad; temperature rose rapidly to 101°, and then fell to 98°, pulse rate being 120. Saline *per rectum* was administered, but death occurred within 12 hours of operation. Microscopical report: Cystic spaces are lined with single layer of cubical epithelium. Cells present on wall of cyst show evidence of inflammation. P.M.—Body emaciated. Thoracic viscera normal, with exception of several ounces of clear serum in pericardium. Abdomen contained a few ounces of blood-stained serum but showed no peritonitis. Both kidneys freely movable, but healthy. Body of uterus enlarged and distorted, several fibro-myomata being present in its wall. One small pedunculated subperitoneal fibroid was attached to the fundus. The ovary of left side had been completely removed. The tube was still present. Right tube appeared healthy though adherent to back of uterus. A cyst was present in broad ligament of right side, obliterating the pouch of Douglas. The cystic cavity was the size of a Tangerine orange and contained dark treacly matter. This apparently represented the right ovary. Adhesions were present between pelvic colon and body of uterus.

*Ovarian teratoma.*—Female 1. Twisted pedicle; cyst contained sebaceous matter, hair, and bone. Four months pregnant.

*Treatment.*—Removal. Subsequent cœliotomy for hæmorrhage from pedicle.

## DIGESTIVE SYSTEM.

*Stomatitis.*—Males 3, female 1. Simple 1, ulcerative 2, gangrenous 1.

*Treatment.*—Medicinal. Scraped 2.

*Fatal case. Gangrenous stomatitis.*—E. P.—, female, æt. 41. Admitted on April 16th, 1905, with seven days' history of pain, headache, and swelling of cheeks and face, together with blood-stained and offensive discharge from the mouth, with signs of septic absorption. On admission extensive black sloughs present on gums and interior of cheeks. Discharge abundant and offensive. On the following day the sloughs were scraped away and raw surface swabbed with strong nitric acid. No bare bone was reached. Slight improvement resulted, and temperature, which had been 100·6° F., fell to normal. Mouth was washed out with a formalin mouth-wash and scraping was again performed on April 22nd; several teeth were removed. Patient did not improve; pulse was feeble though not very rapid. On April 23rd a regurgitant murmur was heard over mitral area, and 3 days later rhonchi were numerous in lungs. Death occurred on April 26th. Pathological report: Films of pus showed large numbers of organisms, bacilli, cocci, and spirilla. No obligate anaerobic organisms could be cultivated. P.M.—Right maxillary antrum contained pus and its walls were carious. Lungs bulky, congested, with patches of septic broncho-pneumonia most marked in right lower lobes. Commencing pericarditis. Heart large with hypertrophy of left ventricle. No valvular lesion. Kidneys small, pale, and granular.

*Tonsillitis.*—Males 2, females 1. All suppurative. ? Tuberculous, 1.

*Treatment.*—Incision in all cases.

*Glossitis.*—Males 2, female 1. Chronic superficial 2; parenchymatous 1.

*Treatment.*—Intra-buccal excision of portion of tongue 1; cautery 1 medicinal 1.

*Simple ulcer of tongue.*—Male 1.

*Treatment.*—Excision of ulcer.

*Tuberculous ulceration of frenum lingual.*—Male 1. Phthisis.

*Treatment.*—Excision of floor of mouth and anterior part of tongue.

*Salivary calculus.*—Male 1. Impacted in Wharton's duct.

*Treatment.*—Excision.

*Esophageal stricture.*—Males 3, female 1. Spasmodic 1. ? Carcinoma 2.

*Treatment.*—Dilatation with bougies 3. Nil 1.

## HERNIA.

*Reducible inguinal.*—Males 247, females 37. Died 5. Right 135; left 106; bilateral 43. Direct 4; congenital sac 21; funicular 8; infantile 2; interstitial 2; *en glassade* of sigmoid 1. For complications see Table I. Scarlet fever 2 (see special abstract). Pseud-hermaphroditism in 1 case; see abstract.

*Treatment.*—Radical cure 298 (reckoning bilateral cases as two operations); Bassini 101; Foster 115; Foster-Wallace 6; Bloodgood 3; suture of canal 66;

suture of pillars 4; ligation and ablation of sac only 3. Orchidectomy 4; orchidopexy 4; abdominal reposition of testis 4; curettage of adenoids 2; excision of varicocele 6; appendicectomy 3; excision of varicose veins 1; incision of post-operative hæmatoma 2; incision of ischio-rectal abscess 1; operation for recurrent hæmorrhage 1; circumcision 3; excision of vaginal hydrocele 3.

*Reducible inguinal hernia, left; irreducible, right, with misplaced testis.*

*Pseud-hermaphroditism.*—E. H—, ♀ female, æt. 21, servant. Right inguinal hernia present from birth. Period of irreducibility unknown. Left hernia not observed by patient. When 15 a truss was worn for some time on right side, but was unsatisfactory. Periods began at age of 15 and were regular for six months; after that they became irregular, and amenorrhœa was occasionally observed for four months at a time. When patient was 18 menstruation ceased for six months, and during this time four or five severe attacks of epistaxis at regular intervals took place. From that date until July of 1905 menstruation was irregular. In July and August there was epistaxis, and since then no bleeding, either vaginal or nasal, had occurred until admission on September 25th, 1905. When menstruation began periods lasted seven days, with great pain, but only a small flow. The amount, but not the pain, diminished when menstruation became irregular. The attacks of epistaxis were unaccompanied by pelvic pain, but were preceded by headache and giddiness. On examination the general appearance was of female type. The voice was soft and the face devoid of hair. Both breasts were well developed and the nipples well formed. The mons veneris was well developed, and the pubic hairs did not ascend towards the umbilicus. The iliac crests were prominent, and the femora approached one another at a fairly wide angle. On October 4th radical cure of herniæ was performed, the canals being sutured with silk. On the right side the sac was found to contain omentum, and the canal was occupied by a genital gland held down by a band passing from lower pole towards perineum. The gland was removed. On the left side a similar gland was found, and the hernial sac was empty. This gland was returned to abdomen. Microscopical examination of the right genital gland proved it to be a *testis* with no sign of ovarian structure. Further examination under anæsthetic was performed on November 1st. The labia majora and minora were perfectly normal in appearance and size. The anterior extremities of labia minora bifurcated to form the preputium and frenum of the clitoris, which was somewhat larger than normal but not cleft. The interval between these labia was smooth, except at its posterior angle, where a small orifice with patulous margins was found. A catheter introduced into this opening passed directly into the bladder. A finger introduced into the rectum could feel this catheter immediately in front of it and separated by little more than the thickness of the anterior rectal wall. There was no evidence of the presence of a prostate gland. Bimanual examination revealed no evidence of uterus or appendages, and no irregularity suggestive of the opening of a genital passage could be made out when catheter was passed along the urethra. On left side of rectum a rounded mass was felt, about one inch in diameter, presumably the genital gland returned from inguinal canal at operation. A slight hydrocele formed in remains of lower half of hernial sac which was left at operation, but the fluid was rapidly absorbed. Convalescence uninterrupted.

*Fatal cases.*

1. *Radical cure of reducible inguinal hernia. Obsolete phthisis, septic broncho-pneumonia.*—D. S—, male, *æt.* 61, labourer. Reducible inguinal hernia of 15 years' duration. Radical cure by Foster's method on sixth day. Contents replaced in abdomen. Sac ligatured with silk. Silk used for closure of canal. Temperature rose to 101° the following day, and signs of bronchitis made their appearance. Temperature remained up, and general condition became worse until death, which took place nine days after operation. P.M.—Operation wound healed. Abdominal cavity healthy, and canal successfully closed. Right lung very bulky, patches of recent exudation. Left lung small, bound down by adhesions. Tuberculous scarring at left apex with an old thick-walled cavity in left lower lobe full of caseous material. Right lung showed a little septic broncho-pneumonia.

2. *Radical cure of reducible inguinal hernia; pulmonary thrombosis.*—G. G—, male, *æt.* 70, pensioner. Reducible inguinal hernia for 2 years, not controlled by truss, producing pain and occasional vomiting. Radical cure performed by Foster's method with silk sutures three days after admission. Sac, which was empty, ligatured and ablated. Hæmatoma formed beneath wound followed by suppuration. Temperature raised to 100° on day following operation, persisting above normal until the 13th day, when death took place rather suddenly. P.M.—Suppurating wound in right inguinal region, no peritonitis or hæmorrhage present in abdomen. Kidneys enlarged, cortex much diminished, showing signs of chronic interstitial nephritis. Lungs emphysematous, old tuberculous scar at right apex. Heart showed considerable left ventricular hypertrophy. Valves healthy, cardiac muscle fairly good. A large adherent clot was present in both branches of pulmonary artery. Aorta showed considerable atheroma. Coronary arteries patent and slightly atheromatous.

3. *Radical cure of reducible inguinal hernia; epiploitis with suppurative peritonitis.*—G. D—, male, *æt.* 49, baker. Healthy subject with a reducible hernia on the left side of 7 weeks' duration, increasing in size, but causing no pain or inconvenience. Radical cure by Foster's method on the 8th day, the canal being sutured with catgut. Sac contained omentum which was ligatured and partially excised. The sac was closed with a purse-string suture. Progress uneventful till 4 days after operation, when patient's temperature rose to 102°, and he complained of abdominal pain. Wound dressed and found to be in good condition. Following day temperature rose to 103°, and the pain was localised to the left side of the abdomen above the ilium. On following two days temperature ranged between 99° and 101°, but the abdominal pain became more severe, and on the 9th day after operation abdominal rigidity became general, with increased tenderness on palpation; tongue furred, bowels opened with difficulty, and on this day the abdomen was re-opened and general peritonitis found with abundant lymph of the small intestine and a quantity of free fluid in the pelvis. No smell was observed. The omental stump at operation appeared healthy, the peritoneal cavity was washed out with saline and drained. The pulse, which was 120 before operation, rose to 136, and patient died a few hours later. Sections of inflamed tissue removed at operation showed large numbers of Gram positive staphylococcus. P.M.—Herniotomy wound was

nearly healed. On opening the abdomen diffuse peritonitis was observed, causing the greater part of coils of small intestine to be adherent to one another. On the left side of the abdomen was a large cake of omentum which had a smooth surface on section, but contained numerous small abscess cavities. Peritonitis was most intense in this segment of the abdomen. The upper segment and the lesser sac were quite unaffected. No ligatures could be found in the omentum. The site of operation showed a few adhesions on its inner surface.

4. *Double reducible inguinal hernia; radical cure with appendicectomy.*—S. G.—, male, æt. 26, gardener. The right hernia had been noticed 12 months, and during the last 6 weeks had caused pain, but was kept up by a truss. The left hernia had not been observed by the patient. Radical cure by Bassini's method was performed on the 3rd day. The right sac contained the appendix, which was removed and showed no pathological changes. On both sides the sac was ligatured and removed and silk sutures were used to close the canal. The patient stood operation well and no untoward symptoms were observed, the wounds healing satisfactorily, when death suddenly occurred at 7.45 a.m. on the 7th day after operation, the patient having just previously remarked that he never felt better in his life. P.M.—All the organs quite healthy and nothing was found to account for patient's death. There was no sign of pulmonary embolism, and though both pulmonary arteries contained clots these were almost certainly post mortem. The lungs only exhibited slight congestion at their bases. Cardiac muscle was good, and the brain normal.

5. *Reducible inguinal hernia; radical cure.*—H. H. C.—æst. 27, male, farmer. Hernia present for 5 months. Truss worn for three days before admission. Hernia was readily reducible and radical cure was performed on 3rd day; the sac contained omentum which was highly vascular, and after ligature and ablation of the part present in the sac considerable oozing was observed on the stump. Canal closed by mattress sutures of Macewen's cat-gut. Progress of case uneventful, stitches removed on the 8th day, wound healthy. The following day, about 1.30 p.m., patient suddenly waved his arms about and leaned over side of bed, when he was noticed to be slightly cyanosed. Breathing was very laboured. Bladder was emptied into bed involuntarily. Artificial respiration was unavailing, and death occurred within a very short time of the onset of attack. P.M.—Well-developed man, upper air and food passages healthy, no fluid in pleuræ or pericardium. Lungs slightly oedematous, and at lower part of right lobe was an extensive extravasation of nearly black blood, as large, superficially, as the palm of a hand, not extending to any depth in substance of lung. Heart contained fluid blood in right ventricle and no clot in first part of pulmonary trunk. A clot, however, was found at the bifurcation of this artery. It lay rather in the right branch than the left and was quite loose. Its size was that of a Spanish nut, and its outer lamina was a whitish shell, whilst the interior was red. Beyond this spot worm-like masses of recent coagulum extended into the lung. No source from which this thrombus could have separated was found and probably, therefore, it had formed in the pulmonary artery itself. Heart healthy, no clots in its recesses. Abdominal cavity contained a little free blood, and in the great omentum close to transverse colon was found a dark-red

soft clot the size of a hen's egg. The source of this could not be traced. Kidneys intensely congested, but otherwise normal, no clot in inferior vena cava or renal veins. Operation wound firmly healed and healthy. Brain and membranes normal. Other viscera healthy.

*Irreducible inguinal hernia.*—Males 45, females 3. Died 1. Right 33; left 14; bilateral 1. Congenital sac 1; funicular 1. Epiplocele 17; enterocele 4; epiplo-enterocele 22; *en glissade* of sigmoid 3; of cæcum 2. Appendix in sac 3. Inflamed 2. Interstitial obstruction within sac 1. Carcinoma of omentum secondary to breast 1. Inflamed hernia and appendicitis 1.

*Treatment.*—Radical cure 38; Bassini 16; Foster 16; Goepel (with perforated thin metal plate) 1; Bloodgood 1; suture of canal 3; suture of pillars 1. Herniotomy, drainage, with subsequent appendicectomy 1. Appendicectomy in 2 other cases, where appendix lay in the sac. Incision of abscess around hernial sac 1. Reduction after short period of irreducibility 8. Truss 1.

1. *Inflamed irreducible inguinal hernia; concurrent appendicitis; herniotomy and drainage; subsequent appendicectomy.*—W. J. P—, male, æt. 61, glass moulder. Inguinal hernia present on right side 23 years. Reducible until 3 days before admission, except on several occasions when patient had attacks of pain in right iliac fossa. These attacks had been unassociated with vomiting and the bowels had acted regularly. Patient had never worn a truss. No vomiting occurred in present attack. On examination a large irreducible hernia present in right inguinal region extending into scrotum as far as upper pole of testis. Cough impulse present; hernia hard and slightly tender. In the appendix region a fairly large hard swelling could be felt extending downwards towards the hernial sac. Slight pain was present on micturition. Rectal examination revealed some tenderness in right iliac fossa. Temperature 101°, pulse 84. Patient was placed on a milk diet, and an enema was administered shortly after admission with a fair result. Temperature normal on 2nd day. During the next 8 days the temperature was very little raised above normal, and the mass in the appendix region rapidly subsided, the hernia still remaining irreducible. Operation on 10th day. Herniotomy revealed inflamed small intestine in the sac with inflammatory adhesions between the bowel and the base of the sac just above the testis. The tunica vaginalis contained a little fluid. The intestine was freed from the sac, washed over with hydrogen peroxide, and returned to the peritoneal cavity. The middle portion of the sac was removed and a cigarette drain was passed through neck of sac into abdomen. The lower part of the sac was also drained. The cigarette drain was replaced by a gauze plug 3 days after operation and the wound healed fairly rapidly. Patient experienced no pain, and temperature was only raised for 36 hours. This operation wound was healed by the 31st day, when appendicectomy was performed through McBurney's incision, the appendix being easily found and exhibiting only slight inflammatory changes. Its lumen was occupied by a faecal concretion at its base, while below this it was distended with mucus. This wound was closed and healed by first intention. Pathological report: Cultures from peritoneal cavity yielded pure growth of *Staphylococcus albus*; cultures from the mucocele, both aerobic and anaerobic, remained sterile. The fluid

showed small mononuclear cells and endothelial cells in large numbers. A few polynuclear cells were also seen, but no micro-organisms. Patient was provided with a truss and discharged on 47th day.

**2. Irreducible inguinal hernia; sac containing carcinomatous omentum.**—H. A—, female, *set.* 52, matron at police station. Inguinal hernia present for 7 years. Three years ago left breast amputated for carcinoma. More recently the hernia had become large, irreducible, and painful. On examination in addition to the irreducible hernia two nodules were observed close to scar in left axilla. Operation for radical cure of hernia on 4th day. The omentum was studded with new growth; a portion of it was removed and the rest returned to abdomen. Microscopical report: Encephaloid carcinoma probably secondary to breast cancer. Canal was sutured and course of case uneventful.

**Fatal case. Irreducible inguinal hernia, en glissade of cæcum; rupture of stercoral ulcers; herniotomy, resection and lateral anastomosis.**—C. H—, male, *set.* 62, male, gardener. Right inguinal hernia present for seven years. Truss worn for 18 months, but not during the last two months before admission. Hernia irreducible for nine months. On admission irreducible hernia with double vaginal hydrocele; patient the subject of chronic bronchitis and emphysema. Treated for some days by rest in bed with elevation of scrotum. This caused some diminution in size of hernia. Herniotomy on ninth day. Sac incomplete, containing cæcum, appendix, and portion of small bowel. Appendix removed. Complete reduction of contents could not be performed. Lateral anastomosis was therefore carried out between ileum and ascending colon, the cæcum and adjacent part of ileum being removed. This was rendered necessary owing to the rupture of four stercoral ulcers, which ruptured during attempts at reduction. Canal was partially sutured and the wound drained. For 24 hours condition was fairly good, but at the end of this time distension of abdomen was present, with uneasiness and tenderness on palpation, vomiting was present, and the pulse became rapid and feeble, being about 120 per minute. Temperature subnormal. Bowels were not opened after operation, and death occurred on third day after operation, with signs of peritonitis.

**Strangulated inguinal hernia.**—Males 19; females 3. Died 3. Right 16, left 7. Enterocoele 11; epiplocele 1; epiplo-enterocoele 3. Richter 1; congenital sac 4.

**Treatment.**—Herniotomy 1; herniotomy and radical cure 14; herniotomy and partial enterectomy (Richter's hernia) 1. Reduction under anæsthetic and subsequent radical cure 1. Reduction without operation 4; death under anæsthetic before operation 1.

**Fatal cases.**

**1. Strangulated inguinal hernia; death under anæsthetic.**—T. A—, male, *set.* 47, engineer. Inguinal hernia of seven years' duration, only partially reducible for two or three years, strangulated ten hours before admission. Imperfect spontaneous reduction took place after a hot bath and the application of an ice-bag. As reduction was not complete no pad was applied. On the third day after admission the swelling increased in size, and patient retched frequently. Pulse rate rose to 104, and discomfort was extreme. An anæsthetic was adminis-

tered, chloroform being the one selected, but colour rapidly became bad, respiration ceased, and the pulse failed altogether. Artificial respiration with injections of strychnine and ether into the heart produced no reaction. P.M.—Inquest. Aortic stenosis. Heart-muscle fairly good. Atheroma of aorta. Bronchitis. Cirrhosis of both liver and spleen. Sac was found to contain small intestine in a state of volvulus.

2. *Strangulated inguinal hernia; herniotomy; radical cure; peritonitis.*—W. B—, male, *æt.* 53, house painter. History of hernia for 30 years. Strangulated for eight hours before admission. Taxis attempted before admission. Scrotum much bruised and swollen. At operation sac had the appearance of a hæmatoma, and contained omentum and congested small intestine. The latter was returned to abdomen, the former ligatured and removed. Radical cure by Foster's method was performed with silk sutures. Two days later patient vomited and complained of abdominal pain. There were signs of dilatation of stomach, which were relieved by lavage. The following day pulse rate rose towards evening to 116, was very feeble, and respirations were 32, temperature being sub-normal. On the morning of following day patient died. P.M.—Site of operation healthy. On opening abdomen, recent peritonitis with inter-intestinal adhesions were observed in the middle segment. No free fluid present. The stump of ligatured omentum close to transverse colon appeared much bruised. No perforation of bowel was present, but an 8-inch loop of ileum, about 7 feet from the ileo-cæcal valve was found to be gangrenous. The liver was fatty; other abdominal viscera healthy. Heart showed enormous dilatation of right ventricle, tricuspid valve being 7 inches in circumference. Valve-flaps healthy. Heart-muscle poor, and no evidence of hypertrophy of right ventricle. The rest of the heart was healthy. Lungs congested and oedematous. Brain normal.

3. *Strangulated inguinal hernia; herniotomy; radical cure; pneumonia.*—J. S—, male, *æt.* 52, canvasser. Hernia present on right side for 11 years. Patient had worn truss. Strangulation 4 days. Herniotomy; sac contained small intestine, which was returned to abdomen. Radical cure by Foster's method, silk sutures being employed. Temperature rose shortly after operation to 100·6° and pulse rate was 134, respirations 32, and within 48 hours temperature, which had steadily been rising, reached 105°; pulse rate was 140 and respirations 52; bowels had been well open. Death occurred on 3rd day P.M.—Wound healthy. Small bowel some feet below the duodenal termination had been constricted and was still discoloured. No peritonitis. Pleural sac healthy, but both lungs were fleshy and solid. The consolidated portions were not so granular as is usually the case in pneumonia. The right apex showed tuberculous scars. Other organs healthy.

*Reducible femoral hernia.*—Males 8, females 14. Readmission 1. Right 7, left 12; bilateral 3. Hydrocele of sac 1. Reducible inguinal hernia 1.

*Treatment.*—Radical cure 22; suture of Poupart's ligament to pectineus fascia 9; Battle 6; Parry 4; Roux (with steel staple) 3; suture of inguinal canal 1.

*Irreducible femoral hernia.*—Males 2, females 16. Readmission 1. Right 10; left 8. Epiplocele 11. Sac containing omentum and appendix at neck of sac 1. Hydrocele of sac 3; blood-cyst of unknown nature 1.



*Treatment.*—Radical cure 14; Battle 6; suture of Poupart's ligament to pectineus fascia 5; Parry 1; Roux 2. Appendicectomy 1.

*Strangulated femoral hernia.*—Males 6, females 20. Died 6. Right 17; left 9. Epiplocele 2; enterocoele 10; epiplo-enterocoele 10; appendix in sac 1; Richter 2; Richter with hydrocele of sac 1. Irreducible femoral hernia on opposite side 1.

*Treatment.*—Herniotomy 7; herniotomy and radical cure 17; coeliotomy and reduction for Richter's hernia 1. Herniotomy and reduction with subsequent coeliotomy resection and axial anastomosis.

#### *Fatal cases—*

1. *Strangulated femoral hernia; Richter; herniotomy.*—F. B—, male, *æt.* 67, house-painter. Left-sided hernia for 12 months. Irreducible 8 days, strangulated 2 days before admission. Operation on day of admission revealed partial strangulated enterocoele of small bowel. Contents reduced, sac ligatured at neck and removed. No radical cure performed. Second day after operation pulse 96, patient complained of flatulence with hiccough; the same evening diarrhoea was noticed together with marked respiratory difficulty. Temperature rose to 99.4° and patient died. P.M.—Lungs emphysematous with dense pleural adhesions on right side. The upper lobe presented old tuberculous cavities while the lower was oedematous. Left lung showed recent caseous broncho-pneumonia in upper lobe, lower lobe extremely oedematous and in a state of hypostatic pneumonia. Heart showed left ventricular hypertrophy, valves competent, muscle fatty. Marked atheroma of arch of aorta, kidneys granular, large intestine collapsed. Reddened oval patch in small intestine 4 in. from ileo-cæcal valve, 1 in. in length, not involving the whole circumference of the bowel, surrounded by peritonitis.

2. *Strangulated femoral hernia; herniotomy; peritonitis; cardiac aneurysm; hydatid cyst of liver.*—E. C—, female, *æt.* 60, dressmaker. Right-sided femoral hernia present for 2½ years. Truss worn until 3 weeks before admission. Bowels not open for 5 days before admission; severe abdominal pain for 4 days, vomiting for 2 days. Double aortic murmur heard over cardiac area. Herniotomy performed; strangulated loop of small intestine replaced in abdomen, sac ligatured and ablated. Femoral ring untreated. Bowels open twice after operation, temperature at the end of 24 hours 100°, pulse rate 104, respirations 24; death. P.M.—Marked emaciation. Trachea and bronchi contained frothy mucus, lungs congested and highly oedematous. Old tuberculous scars at both apices. Pleural adhesions at right apex. A small amount of clear serum present in pericardium; no pericarditis. Heart enlarged from hypertrophy of left ventricle. Aneurism present below anterior cusp of aortic valve, ¾ in. in diameter, wall calcified. A large aneurism with calcified wall present in septum between the two ventricles, communicated with aorta by circular orifice ¼ in. in diameter. Pulmonary cusps as well as mitral and tricuspid were healthy. Heart-muscle dark and firm. Peritoneal cavity contained some ounces of turbid fluid, and intestinal coils were much injected. Scattered flakes of lymph present, most marked over small intestine, 5 in. above ileo-cæcal valve. Liver showed one large hydatid cyst 1 in. in diameter, and several smaller ones. Kidneys granular.

3. *Strangulated femoral hernia; Richter's hernia; abnormal arrangement of abdominal viscera.* J. D—, male, æt. 56, labourer. Difficulty in micturition present for some months. Retention 3 days before admission relieved by catheter. The same night a small lump was noticed in the groin, increasing in size. Painful the next day, no history of vomiting until day of admission, bowels not open for 3 days. On examination, irreducible right femoral hernia with no impulse on coughing. Abdomen rather distended and tender, especially in hernial region. Temperature 99°, pulse 56. Operation. Incision made over right rectus, muscle displaced. Incision of peritoneum revealed distended and congested coils of small intestine. This was followed down to the crural ring, where a Richter's hernia was found to be present, about two thirds of the circumference of gut being strangulated, of dusky claret colour. The gut below was collapsed, lump in groin was seen to have disappeared. Condition after operation was good, and bowels were well open the next day. There was some rise of temperature, not reaching 100°, present for 3 days, and then temperature rose to 100·6°, pulse was 84, and respirations 40; acute diarrhœa set in, bowels being opened 8 times in the 24 hours. This condition persisted, the bowels acting 10 times in the next 24 hours, and the pulse became weaker and patient complained of severe pain in left iliac fossa. Rather sudden collapse and death on morning of 6th day. P.M.—Acute general peritonitis with turbid fluid in flanks and pelvis. No wound or rupture of the intestine was found, and the site of strangulation could not be recognised. Stomach much dilated, cæcum lay in epigastrium beneath liver. Duodenum passed over front of transverse colon and duodeno-jejunal junction lay to the right instead of the left of spinal column. A small pouch of peritoneum was present in right femoral region. The lungs showed hypostatic pneumonia of both lower lobes, the left apex was scarred, and there were considerable pleural adhesions. Heart flabby, containing much recent clot. Other viscera normal.

4. *Strangulated femoral hernia.*—E. M. K—, female, æt. 41, married. Hernia present for 7 years. Never before irreducible or painful. Strangulation 24 hours. Unsuccessful attempts at taxis before admission. Herniotomy revealed a coil of intestine, black, and of diminished resiliency, tightly constricted at neck of sac. The gut still had a lustre on its surface, and Gimbernat's ligament was nicked with a hernia knife, and the intestine replaced in abdomen. A rubber tube was passed through neck of sac and the wound partially closed. Vomiting persisted after operation and patient complained of severe headache. Temperature 100·1°, and pulse 96, 12 hours after operation. Bowels only opened by enema 24 hours after operation, during which time vomiting persisted. This condition lasted for nearly 3 days, when the abdomen was opened through the right rectus and the strangulated gut was easily recognised, being of a green-grey colour; this was resected and axial anastomosis performed. Some turbid fluid was sponged away from peritoneal cavity. Four inches of gut were resected. Wound drained. Bowels opened twice shortly after second operation. Less pain and tenderness of abdomen. Two days after operation condition was good, pulse-rate being 80, temperature normal, abdomen flaccid and very slightly tender; but at the end of this time temperature rapidly rose to 102°, the bowels were inactive, and pulse became above 100, a

condition which persisted for 3 days, death occurring 10 days after admission. P.M.—General peritonitis. Purulent fluid present in large amount in renal fossæ and pelvis. Extensive matting of intestines. Anastomosis covered by plastic lymph, junction sound. Portion of intestine adjacent to the anastomosis about 1 inch in length was black, lustreless, and gangrenous. The mesenteric vessels were thrombosed. Other organs fatty.

5. *Strangulated femoral hernia; herniotomy.*—E. S—, female, æt. 61, married. Femoral hernia present on both sides for many years. Right one suddenly became irreducible while patient was having a bath, three days before admission. Vomiting occurred very shortly afterwards. Herniotomy on day of admission revealed small intestine, all congested, with a small area which was compressed, white, and bloodless. Contents reduced, sac drained. Condition after operation bad. Temperature 100°, pulse 84, and feeble; bowels not open for 24 hours, at the end of which time slight diarrhœa was present, and the temperature became subnormal. Death occurred on the third day. P.M.—Slight peritonitis in lower segments, with about half a pint of free fluid in pelvis and renal fossæ. Four feet from ileo-cæcal valve was a short portion of small gut 1½ inches in length, gangrenous, with thrombosed mesenteric vessels. On the left side was an irreducible femoral hernia containing omentum and pelvic colon; the contents of this sac were healthy. Uterus contained several fibroids, one large, sub-peritoneal and pedunculated. General arteriosclerosis.

6. *Strangulated femoral hernia; herniotomy; radical cure; general peritonitis.*—F. D—, female, æt. 70, small means. Hernia present for several years. irreducible 12 months, strangulated 3 days. Herniotomy revealed small portion of strangulated small bowel completely surrounded by congested omentum. The omentum was removed and the intestine returned to abdomen. Sac ligatured with silk and ablated. Femoral ring closed with silk sutures. Bowels were not open after operation, pulse rose to 108 on the second day and death ensued. P.M.—Abdomen contained a good deal of sero-purulent fluid, and a quantity of lymph was deposited on the surface of intestines, which were congested. Peritonitis was general. Three feet from ileo-cæcal valve a portion of small intestine 4 inches in length was found to be gangrenous. The coat was not perforated though its walls were greyish black in colour and soft. Spleen was enlarged, soft, and diffident. Kidneys slightly granular. Lungs emphysematous, with old pleural adhesions.

*Reducible ventral hernia.*—Male 1; females 6. After incision and drainage of appendix abscess 3; after cœliotomy for septic ðophoritis 1; after "abscess" 1; after appendicectomy for appendicitis and local peritonitis 1.

*Treatment.*—Suture of abdominal wall in layers 6; Gðepel 1.

*Irreducible ventral hernia.*—Males 3; females 4. Epiplocele 4; enterocele 2; extra-peritoneal fat 1. Inflamed and ruptured sac, with ulceration of intestine 1. After cœliotomy 2; appendix abscess 1.

*Treatment.*—Suture of abdominal wall in layers 6. Herniotomy, resection, and axial anastomosis 1.

*Inflamed irreducible ventral hernia, with ulceration of skin and bowel; rupture of sac; resection and axial anastomosis.*—E. F—, æt. 42, female,

married. Operation 21 months before admission for tumour in lower part of abdomen. Ventral hernia noticed for nine months, ulceration of skin for two months. Patient was admitted with a history of vomiting, and during her bath on admission she retched rather violently. The sac ruptured when patient was lying in bed, during a fit of coughing. About 2 feet of small intestine escaped; these were immediately washed over with hot saline and wrapped in a sterilised towel while patient was conveyed to theatre. Some of the prolapsed coils were covered with lymph, and some were healthy. There had been two ulcers over the sac, and the floor of the upper one was formed by two loops of gut, one close to the prolapsed intestine and the other several feet away. The sac was opened up and  $3\frac{1}{2}$  feet of small intestine were removed, together with the ulcerated skin over sac. An ulcer involving the outer coats of a portion of intestine in the lower coil was excised without opening its lumen. An axial anastomosis was then performed, and the abdominal wall was sutured after a drainage-tube had been inserted. Condition after operation fairly good, temperature was  $99^{\circ}$ , pulse 106, respirations 30. Patient was placed on rectal feeding, after the administration of a turpentine enema, for four days, when mouth feeding was begun, and a good action of the bowels resulted from a dose of Ol. Ric. Wound discharged offensively for several days, and temperature was somewhat raised for the first 11 days, but from that time onward she made an uninterrupted recovery. Provided with an abdominal belt and discharged on 27th day.

*Strangulated ventral hernia.*—Female 1. Recurrent after coeliotomy for fibroids. Enterocoele.

*Treatment.*—Herniotomy and radical cure.

*Reducible umbilical hernia.*—Males 2, females 2. Infantile 1.

*Treatment.*—Suture of abdominal walls in layers 3. Gräpel 1.

*Irreducible umbilical hernia.*—Males 2, females 11. Died 1. Epiplocele 6; entero-epiplocele 1; infantile 1; obstructed 1; inflamed 1; mesenteric thrombosis 1.

*Treatment.*—Suture of abdominal wall in layers 7. Reduction and belt 1; hot dressings and rest in bed 4. Herniotomy, resection, and lateral anastomosis for mesenteric thrombosis 1.

*Fatal case. Irreducible umbilical hernia; thrombosis of mesenteric vessels.*—S. J. W.—, female, *æt.* 76, mantle-maker. Widow. Umbilical hernia present for 2 years, irreducible for latter part of this time. Attack of severe pain at umbilicus with vomiting 1 day before admission. Immediate operation revealed omentum adherent to sac wall, and small gut, 8 inches of which were gangrenous, the mesentery being thickened and inflamed and without pulsation. No signs of strangulation, though neck of sac was very narrow. Omentum removed, gangrenous gut resected, and lateral anastomosis performed. Lavage with hot saline and drainage of wound. Condition for 24 hours after operation was fairly good, but then vomiting occurred; temperature was  $100^{\circ}$ , pulse 134, and bowels were only opened by enema to slight degree; pulse gradually got weaker, and vomiting persisted with increasing abdominal pain in right lumbar region. Death on 4th day. P.M.—Intestinal contents free in peritoneal cavity. Peritonitis present. Extravasated fluid in renal fossa of right side and in pelvis.

Lesser sac and upper segment of abdomen clean. Lateral anastomosis had been performed 18 inches from ileo-cæcal valve. The union was not watertight and the gut was necrotic. No attempt at repair. Some thrombosis was present in the adjacent mesenteric vessels. No disease in the vena cava or its larger tributaries. Liver was fatty and cirrhotic. Heart dilated, muscle soft. Regurgitated stomach contents present in bronchi. Lungs showed extreme oedema.

*Strangulated umbilical hernia.*—Females 11. Died 5. Enterocoele 7; epiplo-enterocoele 4. Recurrent herniæ 2. Post-operative parotitis 1.

*Treatment.*—Herniotomy and radical cure 6; herniotomy, resection, and lateral anastomosis 2; herniotomy, resection, and axial anastomosis 1; herniotomy and establishment of artificial anus 2.

*Strangulated umbilical hernia; resection of gut with circular enterorrhaphy; secondary parotitis; recovery.*—M. P—, female, æt. 52. History of umbilical hernia for 13 years. Readily reducible until 2 days before admission. During this time patient had worn a belt. Forty-eight hours before coming to hospital the patient experienced great pain in hernia, and vomited. Reduction of the mass was impossible. On admission there was a large strangulated umbilical hernia, the skin over which was discoloured slightly, while the tension was diminished. Temperature 102°, pulse 108, respirations 24; tongue very dirty, urine contained small amount of albumen. Immediate herniotomy was performed and 10 inches of gangrenous small intestine were found in the sac together with adherent omentum. The adherent portion of omentum was removed, the gangrenous intestine was resected, and end-to-end anastomosis performed with double row of silk sutures. Condition during operation was fairly good, and the next day temperature was normal but the pulse rate 120; 2 drms. of mag. sulph. were administered at 2-hour intervals on the 3rd day and 2 actions of the bowels were obtained. The following day temperature rose to 102°, and the left parotid gland was found to be enlarged and tender. Two days later this swelling was incised but no pus was found. A culture taken from the parotid yielded growth of *Staphylococcus albus*, *aureus*, and an intermediate coccus. Temperature was slightly raised during the next 3 days, and some purulent discharge came away from the parotid incision and the herniotomy wound, which had only been partially closed at operation. At the end of a fortnight patient stated that she had never felt better in her life; the tongue was clean and bowels were open naturally and patient was on full diet. On the 18th day she got up but appeared weak, and 5 days later temperature suddenly rose to 103·4°, and pulse rate became 120, respirations 28. The patient complained of abdominal pain and looked very ill. No physical signs could be detected in the abdomen; bowels were open regularly and no vomiting occurred, but a daily rise of temperature was recorded for 12 days, at the end of which time there was a gradual improvement, and at the beginning of the 7th week temperature was normal, the wound was healed, patient had no pain, and was on full diet. Discharged on 46th day with an abdominal belt.

#### *Fatal cases.*

1. *Strangulated recurrent umbilical hernia; herniotomy; resection and lateral anastomosis; peritonitis.*—S. A—, female, æt. 48, married. Previous

operation for umbilical hernia in March, 1901, in this hospital. Recurrence 12 months before admission with symptoms of strangulation of 2 days' duration. Previous attack of severe pain in hernia one month before admission. Sac opened by vertical incision, found to contain 5 in. of gangrenous small intestine strangulated in diverticulum of sac. Resection and lateral anastomosis performed, free ends being closed and covered together with omental graft. Wound partially closed with salmon gut and sac drained. Considerable shock after operation, relieved by saline infusion, 2½ pints, intravenously. Subsequent administration of saline *per rectum*, strychnine, and digitaline. The same evening patient had a rigor, temperature rising to 101·8° and the pulse to 152. The following day pulse became slower and temperature fell to normal, and condition remained fairly good, bowels being opened by enema on the 3rd day after operation. Improvement, however, was not maintained, and death took place 5 days after operation. P.M.—Very obese subject. On opening abdomen there was seen to be general peritonitis, with extravasation of intestinal contents. The lateral anastomosis was found to be sound, though the bowel wall was not in a healthy condition. The free ends of the closed bowel had given way at three points and allowed extravasation and infection to occur. Nothing of note in other organs.

2. *Strangulated umbilical hernia; faecal extravasation and peritonitis.*—L. A—, female, æt. 46, married. Umbilical hernia for many years, irreducible but painless. Five days before admission severe abdominal pain, localised chiefly to right iliac region. Hernial swelling not noticed to be painful. Vomiting for 3 days, the vomit being stercoraceous for 24 hours before admission. Abdominal pain decreased during this latter period. On admission, considerable distension of abdomen with protrusion in region of umbilicus about the size of an orange. The skin over this was red and slightly oedematous. No cough impulse present, no tension of hernial contents. No peristalsis visible; slight shifting dullness in flanks, tenderness most marked in right iliac region. Palpation in hypogastrium revealed presence of large fibroids for which patient had been treated in Out-patient Department. *Per rectum*, mass of fibroids felt filling up the pelvic cavity. Pulse 108 and weak. Face pale and eyes sunken. Immediate cœliotomy was performed and the hernial sac was fully exposed and found to contain omentum which looked healthy, but close to the neck of sac was found a loop of small intestine exhibiting two constrictions, and behind this a wide, ragged hole was present in the small intestine. Gangrene of gut had evidently been caused by constriction at neck of sac, and the involved coil had ruptured and become reduced into peritoneal cavity, where there was abundant faecal matter. The cavity was washed out with saline and a small Paul's tube was fixed in the ruptured bowel, the wound being partially closed. Intravenous infusion was carried out during the operation and strychnine was administered hypodermically, but death occurred from shock half an hour after operation. P.M.—Body very fat; coil of bowel which had been strangulated in sac was much congested and the intestine above was distended with fluid, while below there was some collapse. The strangulation had occurred 40 in. below the duodeno-jejunal flexure. Fluid faecal matter was still present in right renal pouch and among coils of intestine. There was also commencing peritonitis.

Left pleural sac showed dense and almost universal adhesions. Old tubercle at apex. Both lungs oedematous. Heart muscle very soft. Kidneys showed cloudy swelling. Liver fatty. Pelvis occupied by mass of uterine fibromata. Uterine cavity much distorted, both tubes distended with fluid of greenish colour, and both ended apparently in cystic cavity in each ovary. Fibro-myomata were subperitoneal and submucous.

3. *Strangulated umbilical hernia; herniotomy; artificial anus.*—C. H—, female, *æt.* 48, cook. Hernia present for a considerable period. Sudden enlargement two days before admission. Acute pain and vomiting at onset, bowels unopened for 48 hours. On admission, the skin over the sac was red and inflamed and the swelling was hard to the touch, having no cough impulse. Condition of patient very poor, pulse 100, and feeble. Sac opened and found to contain gangrenous small intestine. A Paul's tube was inserted into healthy gut above this gangrenous area. Sac not closed, intestines being left *in situ*. Oxygen and adrenalin were given during the anæsthetic, but patient's condition was desperate, and death occurred three quarters of an hour after operation. P.M.—Very fat subject. Lower lobes of lungs engorged. Heart hypertrophied and dilated, both mitral and aortic valves being thickened. Large amount of sub-epicardial fat, aorta atheromatous. Four feet of lower end of ileum found in opened hernial sac. Most of this was gangrenous, and the gangrenous portion was sharply marked off, the constriction being at the neck of the sac. Uterus showed large numbers of fibroids, subserous and intra-mural, some of them calcified. Uterine cavity 8 inches in length. Left kidney showed dilatation of pelvis and ureter, the result of pressure from uterine fibroids. Right kidney hypertrophied and twice the normal size. Other organs normal.

4. *Strangulated umbilical hernia; herniotomy, resection, and lateral anastomosis.*—L. B—, female, *æt.* 52, married. Hernia only observed one day before admission. Symptoms of strangulation for six hours. Immediate herniotomy revealed three loculi in which were strangulated omentum and rather more than 6 feet of gangrenous small intestine. Omentum was partially removed and the stump returned to abdomen, while intestine, 7 feet 6 inches in length, was resected, the free ends being closed and the bowel anastomosed by lateral junction. Wound partially closed and drainage allowed for. Pulse, which on admission had been 84, rose to 100 shortly after operation, and temperature was 101° on second night; this, however, fell to normal, but patient was persistently sick in spite of lavage of stomach and the administration of cocaine. Bowels were unopened, although calomel and Ol. Ric. were given, and enemata produced no result. Death took place with the symptoms of peritonitis four days after operation. P.M.—Very fat subject. Pleuræ healthy, lungs somewhat oedematous. Heart uniformly enlarged from dilatation and hypertrophy, encased in considerable amount of fat. Valves healthy. Moderate degree of peritonitis, with distension and injection of small intestine. Lateral anastomosis of small bowel to ascending colon pervious and watertight. Stitches in adjacent mesentery were tearing out. Liver rather fatty, gall-bladder contained large calculus, but showed no signs of recent inflammation. Kidneys granular, with thickened vessels. Large ovarian cyst filling pelvic outlet on left side. Other organs healthy.

5. *Strangulated umbilical hernia; herniotomy; radical cure; obesity.*—S. C.—, female, æt. 46, married. Hernia present for years. Increased in size by repeated pregnancies. Symptoms of strangulation five days before admission. Two large superficial ulcers were present on the skin covering the sac. The unhealthy skin was excised, sac opened, and the contents, consisting of portions of ileum, colon, and omentum, were reduced. Neck of the sac was closed with salmon-gut sutures. Temperature after operation fell to 96°, but rose a few hours later to 98°, while the pulse rate increased to 134, and at midday on the day following operation the patient died. P.M.—It was found that the sac had not been completely removed, and that the greater part of the ascending and the whole of the transverse colon had been in the sac, the bowel showing definite marks of constriction, but being still healthy. The ascending colon has a distinct mesentery. There was no trace of peritonitis. Lungs œdematous and small, heart flabby and friable. Pleuræ and pericardium healthy. Liver large and fatty. Kidneys showed increase of fat in cortex and pelvis. Other viscera appeared normal.

#### APPENDICITIS.

*Simple appendicitis.*—Males 97; females 61. Died 1. Acute 5; subacute 1; tuberculous appendicitis 1; actinomycosis of appendix (admitted in 1904 with appendix abscess, and readmitted in 1905 for appendicectomy); special abstract see below. Previous drainage of abscess 21. Post-operative peri-cæcal abscess 1. For other complications see Table I.

*Treatment.*—Appendicectomy 147; subsequent drainage of peritoneum 8; appendicectomy, colostomy, with subsequent closure of artificial anus 1; appendicectomy with resection of cæcum and ileo-cæcal valve with lateral ileocolostomy 1. Cœliotomy and drainage without removal of appendix 3. Stretching of sciatic nerve 1. Oophorectomy 1; drainage of empyema 1; operation for recurrent hæmorrhage 1. Operation for acute appendicitis of 14 hours' duration 1; 30 hours' 1; 36 hours' 1; 48 hours' 2; subacute 10 days. Operation after first attack 68; after second 34; after third 24; after fourth 6; after fifth 1; after sixth 7; after more than six attacks 10. Longest history 10 years. Well-marked concretions present in 13 cases, 2 present in 3 cases, 1 contained two short hairs; soft fæcal matter containing six short hairs present in one case; two small, round shot found in one appendix which was healthy. Anticolon serum in 1 case.

*Fatal case.*—*Appendix abscess; residual abscess; empyema; actinomycosis of liver.*—H. J. L.—, male, æt. 26, police-constable. Admitted on Medical side in first attack with three weeks' history of abdominal pain with acute onset. No vomiting, bowels regular, but a persistent feeling of illness. On admission abdomen not distended, respiratory movement markedly diminished, a tender fixed mass felt in right iliac fossa extending into right lumbar region. Percussion over this yielded a dull note. Some fulness was observed in lumbar region on right side behind. Palpation in interval between right iliac crest and costal margin was painful. Liver dullness normal, rectal examination negative. Pulse 82, regular, temperature 101°. Operation on second day. Drainage of large abscess extending on outer side of cæcum and ascending colon to lower pole of right kidney,



after irrigation with saline. Wound closed slowly and it was nearly healed at end of four weeks, when patient was discharged to convalescent home on June 22nd, 1904. Readmitted on July 11th with a small sinus at site of wound and tenderness on pressure in right iliac region. Hot dressings applied and lump decreased in size, though temperature was not quite normal. On July 29th abdomen was opened and dense adhesions found between appendix and posterior wall of cæcum. The appendix was removed and found to have a perforation near its base with a corresponding opening in cæcal wall. A quantity of foul-smelling exudate was found in the old abscess cavity, and after invagination of the appendix stump and suture of the cæcal perforation, the wound was partially closed, drainage being effected by gauze-plug. Temperature was 100° the next evening, and plug was replaced by drainage-tube. Discharge from wound abundant for ten days, when healing began to be rapid, but pain on respiration was experienced and dullness was present on percussion at base of right lung, with signs of compression. On August 17th abdomen was reopened to the right of former incision and a considerable amount of offensive pus was evacuated below level of right costal margin. Wound drained well, but temperature was little altered and ranged between 99° and 101° until September 8th, when definite signs of dullness from angle of right scapula to base of lung were present. The 9th rib was exposed and a portion resected, pleural cavity stitched off, and diaphragm incised. No collection of fluid was found. Old sinuses were more efficiently drained by tubes. Pus from wounds was examined for tubercle bacilli with negative result. Condition remained unaltered for four weeks, discharge being abundant and offensive, with the signs of hectic fever. Further operation for more efficient drainage on October 7th. Anti-staphylococcus serum administered on October 16th, and doses of 10 and 15 c.c. repeated two days later. Leucocyte count on October 25th, 13,840 per c.mm., blood-culture from vein of arm 3 days later found to be sterile. Trace of albumen present in urine. On November 5th collection of pus evacuated through incision just external to right erector spinæ just below 12th rib. Considerable bleeding occurred, and cavity was found to involve posterior aspect of liver. Persistent discharge from all sinuses, with formation of abscesses in various parts of body, chiefly over points of pressure treated by incision. Temporary improvement in condition from December 12th to the 22nd, when temperature again became hectic, rising every night to 102°. Right chest aspirated on December 31st with negative result, and again with no result on January 14th. No improvement in condition; death occurred on January 21st, 1905. P.M.—Marked emaciation. No peritonitis present, but numerous abscess cavities: (1) around right kidney; (2) beneath right lobe of liver; (3) extensive retroperitoneal suppuration, with multiple abscesses in vertebral muscles. These abscesses have been fairly well drained. Bodies of vertebrae from sixth dorsal to third cervical were soft and necrotic; the lower four ribs on the right side were bare of periosteum. Both pleural cavities contained pus, right side recent, and 12 oz. in amount. Left empyema was of old standing, and contained 10 oz. Definite localised abscess found in right lobe of liver, the liver itself being large, soft, and fatty, giving no lardaceous reaction. Softening clot present in inferior vena cava, just below entrance of left renal vein, and a second clot found at junction of common iliac veins extending as far as femoral vessels. Azygos veins dilated and prominent.

Heart pale and fatty, no valvular lesion; kidneys large and pale; lungs were both the site of purulent bronchitis with broncho-pneumonia. Pathological report: Liver shows actinomycosis with a large number of actinomyces colonies.

*Appendicitis; abscess.*—Males, 32; females, 20. Died, 7. Readmissions 3, 2 with residual abscess, 1 with spreading peritonitis infected from sinus. Recurrent abscesses, 2; leaking abscess, 1; suppurative parotitis and empyema, 1; German measles, present on admission, 1; subsequent intestinal obstruction from adhesions and secondary hæmorrhage, 1; appendix abscess arising during convalescence from pylorotomy for carcinoma (see special abstract), 1; endo-thelioma of appendix, 1. First attack, 38; 2nd, 8; 3rd, 1; 4th, 1; more than 4 attacks, 4. Fæcal concretions present in 5 cases; 2 in 1 case; 1 concretion contained 5 short hairs.

*Treatment.*—Incision and drainage, 34; incision and appendicectomy, 18; subsequent appendicectomy during same stay in hospital, 2; in one case appendicectomy and sponging for general peritonitis. Subsequent enterolysis for obstruction, 1, with subsequent appendicectomy and operation for recurrent hæmorrhage; drainage of secondary pelvic abscess, 1; incision of parotid, 1; resection of rib, 1. Anti-colon serum in 2 cases.

*Appendix abscess; intestinal obstruction by adhesions after drainage of abscess; general peritonitis; recovery.*—J. D. S—, male, æt. 11, school. Past history good. First attack. Eight days before admission patient complained of abdominal pain. He was put to bed and hot poultices were applied to lower part of abdomen. Vomiting occurred on 4th day and was repeated 6 times during the night. The next day condition was better, but 2 days later pain and vomiting recurred. The pain had always been in right iliac fossa, and the bowels had only been relieved by enemata. Temperature had ranged between 99° and 100·5°. There had been some pain on micturition. On admission the boy was pale, with anxious expression; temperature 100°, respirations 28, pulse 100. Abdominal movements poor. A definite swelling could be seen and felt in right iliac fossa, where there was marked tenderness on palpation. Immediate operation was performed, the rectus being displaced and a large abscess which extended up on outer side of colon and down into pelvis being drained. A small fæcal concretion was removed from the bottom of pelvis; on its inner side the abscess was fairly completely shut off from general peritoneal cavity. Two large drainage-tubes were inserted and the wound closed. Temperature on 3rd day fell to normal, and the discharge from wound was abundant. Irrigation with hydrogen peroxide was carried out daily. Bowels well open on 2nd day. Some pain on micturition persisted after operation. Severe pain on left side of wound came on on 18th day, and patient was sick and showed signs of collapse. The vomiting was repeated, and a swelling was seen beneath abdominal wall on left side of previous incision. Palpation over this revealed succussion. A second coliotomy was performed and the prominence found to be due to dilated coils of small intestine which were adherent on inner side of abscess cavity. Lymph was present on all the coils of small intestine exposed, and a little free fluid was found in the pelvis. Enterolysis was performed and the exposed coils were washed over with saline. The second wound was drained and the original

abscess cavity was explored and fresh tubes inserted. For 2 or 3 days condition was very bad, temperature was slightly raised, pulse rate 100, and bowels only opened by enema. Vomiting was frequent. On 5th day stomach was washed out and patient was put on rectal feeding. The vomiting ceased and pain greatly diminished, but 5 days later there was slight hæmorrhage from the site of original wound. This hæmorrhage recurred on two subsequent days, although the wound was plugged with gauze soaked in adrenalin. On 26th day after admission the wound through which abscess had been drained was reopened and the hæmorrhage found to arise from suppurative inflammation affecting the deep epigastric artery. This was clamped with artery forceps, and the forceps were left *in situ* as the tissue would not hold a ligature. Infusion with 2 pints of saline was carried out. After this patient improved considerably, though for 3 days he complained of headache, and the temperature rose on 2 occasions to 102°. At the end of 5th week patient again began to suffer from abdominal pain, and vomiting reappeared. Temperature reached 100°, and pulse rate was 120. Further operation was performed, the abdomen being opened between the two previous incisions which were closed by a collodion dressing. The intestines were found matted together and adherent to the abdominal wall, and the adhesions were firm. Enterolysis was performed and the appendix was removed; it was found to be practically healthy except at its tip, which was adherent to the bladder. Patient stood this operation well, and with the exception of some discharge of pus 9 days later wounds healed soundly, and patient was discharged after having been in hospital nearly 3 months. Original abscess was practically odourless. No sign of ventral hernia on discharge.

#### *Fatal cases.*

1. *Appendix abscess.*—C. McC—, æt. 49, male, cellarman. Second attack. First attack 4 years ago. Second began 8 days before admission, with epigastric pain and vomiting. Aggravation of symptoms so that 3 days before admission pain was severe enough to make patient sweat, and vomiting became more marked, the pain settling down and remaining constant in right iliac fossa. State: no marked rigidity of abdominal muscles; tender swelling in right iliac region apparently lying on posterior wall of abdomen, elongated in a direction parallel to Poupart's ligament and apparently the size of a hen's egg. No tenderness over rest of abdomen. Slight diminution of resonance over this mass. Tongue dry and furred; temperature 96°, pulse 96, regular. Retrocæcal abscess drained through McBurney's incision, the inner part of wound being packed off with gauze plug. Condition on following day satisfactory except for rise of temperature to 101.6. Discharge from wound abundant. No pain present; calomel in repeated doses had no effect. Next day patient vomited, and this vomiting was repeated; no action of the bowels was obtained in spite of enemata and purgatives, and pulse rate remained over 100, while the temperature became subnormal, and death took place 4 days after operation. P.M.—General peritonitis; numerous collections of pus between intestinal coils. Commencing inflammation just below the right cupola of diaphragm, and a little purulent matter in both renal fossæ. The last coil of ileum was found to be kinked sharply on itself, being adherent over the front of the cæcum. The gut above this was distended, while the coil itself was collapsed. Appendix lying to outer side of cæcum,

adherent to obstructed portion of ileum. A stricture was present 2 inches from its base, the proximal part being gangrenous and ruptured, exposing its cavity for 2 inches. Lesser sac clean. Other organs healthy except for calcified bronchial gland.

2. *Appendix abscess.*—E. B—, male, æt. 43, general dealer. Second attack. First two months ago; second, 12 days' history of abdominal pain with noticeable lump in right iliac fossa, but no vomiting and no constipation. On admission abdominal movement good. A large, tender mass felt in right iliac fossa. Percussion note over this impaired. Exploratory incision made by displacement of rectus revealed matting of omentum and intestines. Abscess entered by McBurney's incision and found to extend inwards beneath intestines as far as vertebral column upwards to lower pole of kidney, while below it was limited by the pelvic brim. Appendix not seen or felt. Large drainage-tube inserted. Convalescence rapid. Patient discharged to convalescent home with wound practically closed on 22nd day. Readmitted three weeks later, the wound having never quite closed. A small quantity of yellowish fluid found on the daily dressings. One week after previous discharge patient was seized with pain in abdomen and vomiting. This attack was very brief, but a week later the wound broke open and the discharge became more abundant. On admission a large mass could be felt in right iliac fossa, extending from anterior superior spine of ilium, half-way upwards and inwards to umbilicus. Percussion note over this area dull, with some deep-seated tenderness. Wound of former operation represented by sinus two inches in length. Daily dressings, occasional pain, no rise of temperature. Mass gradually diminished in size and amount of discharge greatly diminished. Patient went out at end of four weeks. Again readmitted 19 days after discharge, the wound having opened up again 2 weeks before. Two days before this third admission there was an acute attack of pain radiating to back across the lower part of the abdomen and down the thigh. Character of the discharge became altered to yellowish-brown material. State: Abdomen moving poorly on respiration, recti rather rigid, large mass in right iliac fossa of greater extent than ever before. Percussion note dull, mass slightly tender. Sinus apparently as before. Appearance of patient very anæmic and unhealthy. Pus examined for actinomycosis with negative result on three occasions. Numerous cocci present. Blood contained only 38 per cent. of hæmoglobin. Drainage of residual abscess beneath old wound on 13th day. Sinus also opened up. Fæcal fistula apparently communicating with large bowel appeared two days later. Profuse discharge of purulent and fæcal matter, with temperature ranging between 100° and 101° for three weeks, at end of which time patient became noisy and delirious, and diffuse extra-peritoneal cellulitis made its appearance, and was relieved by incision. Death occurred early in 6th week. P.M.—No general peritonitis. Abscess cavity firmly shut off from general peritoneum; walls of this cavity were ragged and necrotic, and it had extended into the psoas and iliacus muscles, the lower part of abscess extending downwards beneath Poupart's ligament. Here an incision had been made. Appendix had sloughed away, and its remains were found behind the cæcum. Recent perforation in posterior wall of cæcum. Liver soft and fatty. Spleen showed some scattered perisplenitis. Left kidney showed fibrotic atrophy, with

calculus impacted in its ureter three inches above the bladder. Other organs *nil*.

3. *Appendix abscess.*—A. W. D—, male, æt. 13. Three previous attacks, the first being one year ago. The fourth began 8 days before admission with sudden onset of abdominal pain, intermittent in character. No vomiting; constipation marked. On admission very little abdominal distension, respiratory movement fairly good. Tenderness present on palpation just above pubes. No shifting dullness in flanks; rectal examination revealed a tender swelling on the right side behind the bladder. Tongue covered with thick fur; temperature 100·6°. Under the anæsthetic a resistant mass was felt in the right iliac fossa. Median celiotomy revealed a large abscess around the cæcum, the pus having a very foul odour. The abscess cavity extended into the pelvis. Appendix adherent to mesentery of small bowel, which it had perforated, forming an abscess on opposite side of mesentery in the pelvis. When removed the appendix was found to be catarrhal, and in its distal half-inch was fibrotic and stenosed, with perforation at tip. Its mesentery was markedly infiltrated. The intestines were exposed on left side of abdomen, but no pus was present. Lavage with saline of the abscess cavity was carried out and drainage of the peritoneum through median and two lumbar incisions. Condition remained fairly good until the 5th day, when a fæcal fistula developed, there being bile in the discharge. Three days later condition of diarrhoea was present, with considerable rectal hæmorrhage repeated several times. Discharge from wound was abundant and usually blood-stained. Rather severe epistaxis on 10th day. Marked pallor present; pulse 112; temperature 100°. Infusion the next day with saline, one pint, adrenalin (1 in 1000) 10 minims, followed by a rigor and rise of temperature to 102·4°. Bleeding from both rectum and nose continued for 12 hours, and death occurred on the morning of the 13th day. No P.M.

4. *Appendix abscess.*—H. S—, male, æt. 20, brass finisher. First attack. Admitted on Nov. 29th, 1905, with 10 days' history of abdominal pain with sudden onset in epigastrium. Pain continuous but not preventing patient from working for 2 days, at the end of which time pain increased in severity, but there was no return of the initial vomiting. Pain was not localised to right iliac fossa until the 3rd day. Bowels not open naturally during first 5 days of attack; an enema, however, produced a satisfactory result. No recurrence of the vomiting, but increasing severity of pain, most marked on the day before admission. Abdomen distended and tender, tenderness being most marked in right iliac region, where there was a localised swelling and resistance. Respiratory movements limited in lower abdomen, tongue furred, temperature 100°, pulse 108, respirations 24. An abscess was opened and drained on November 29th. Found to contain about 2 drachms of pus, the appendix being coiled round about two thirds of the abscess wall; pelvic in position and apparently shut off from rest of peritoneal cavity. On following day abdomen was more distended, Hippocratic facies was well marked, pulse rate 136, respirations 30, and vomiting was present. Further operation was undertaken, the wound being opened up, and with some difficulty the appendix was removed, the peritoneal cavity was cleansed by sponging, and the wound drained. Very little power of recovery was exhibited, temperature remained about 100° and pulse-rate was 160

the next morning and patient showed signs of profound toxæmia; death occurred on 3rd day. Pathological report: No evidence of *Bacillus coli* in cultures from peritoneum. P.M.—Slight general peritonitis, the most intense inflammation occupying the right lumbar region and extending upwards into the right subdiaphragmatic space. The inflammation had also involved the pelvis and extended upwards a short distance along the pelvic and iliac portions of the descending colon. Lungs much congested, kidneys and liver showed cloudy swelling.

5. *Appendix abscess; leaking*.—A. H—, male, æt. 29, baker. Patient states that he has always been unhealthy. Erysipelas 1 year ago. First attack of appendicitis. Nine days before admission abdominal pain accompanied by sickness. No action of bowels till day of admission, when slight result was obtained by enema. On examination, no distension or swelling of abdomen on inspection. Respiratory movement bad. Marked tenderness on palpation in right iliac fossa and lumbar regions. Mass felt in right iliac region, where percussion note was impaired. *Per rectum* a well-marked cystic swelling felt anteriorly and to the right. Fluctuation obtained by bimanual examination. Systolic murmur over pulmonary area. Patient thin, expression anxious. Tongue dry and brown, pulse 120, weak, and thready. Temperature 101·2°. Immediate coliotomy through right rectus, a large abscess cavity being entered on opening peritoneum shut off on all sides but the inner. The abscess cavity extended into right flank. A gauze plug was placed at inner part of abscess, which was drained through anterior wound and counter incision in loin. Condition fairly good for 2 days. Bowels open twice on day after operation. At the end of this time temperature, which had been below 100°, rose to 101·4°, pulse rate 128, respirations 28. The wound discharged freely, but patient complained of some abdominal pain; temperature remained high, and though patient remained cheerful his pulse was hardly palpable. Death occurred on 7th day. P.M.—General purulent peritonitis involving submesocolic area of great sac and also right subdiaphragmatic region. Lesser sac dry and sticky. Terminal portion of appendix could not be found; the distal part was healthy. Abdominal organs showed cloudy swelling. Pleuræ healthy. Right lower lobe of lung congested and semi-solid. Left lower lobe collapsed. Left upper and lower lobes and also right upper and middle lobes showed deposits of old tubercle.

6. *Appendix abscess*.—C. S—, female, æt. 18, laundress. Numerous brief attacks during last twelve months. Four days before admission sudden seizure with pain in right side of abdomen, spreading also to the left side. Vomiting occurred a few hours later, and was repeated throughout the next day. Bowels open after administration of salts. On admission to hospital, abdomen was distended and tender uniformly with increase in right iliac fossa, where definite resistance was encountered on palpation. On percussion dulness was present in this region, extending from Poupart's ligament to the umbilicus. Temperature 101·8°, pulse 130, tongue coated with thick yellowish-white fur. Operation the same day, abdomen being opened by displacement of rectus. A little serous fluid escaped on incising peritoneum. The appendix, which was 6 inches long, was adherent to back of cæcum, and removed with difficulty. A large abscess

cavity was found running up behind cæcum and extending downwards into pelvis. Two concretions were found, one of these in the abscess cavity and one in the appendix, which was gangrenous and perforated. Abscess cavity treated by dry sponging and drainage. Condition after operation was fairly good, and remained so for 36 hours, though the pulse was over 130 and no action of the bowels was obtained. At the end of this time, when patient was taking some beef-tea, she was observed to become suddenly worse; both pulse and respiration increased in rate, the former being very feeble. Some attempt at vomiting occurred, and death ensued within an hour and a half of this sudden collapse. P.M.—General acute peritonitis, most marked around cæcum. Stump of appendix sound. Left Fallopian tube dilated, containing pus. Partial examination only.

7. *Appendix abscess.*—K. P.—, female, æt. 12, school. Second attack. First one a year ago, with only pain in right iliac fossa. Three days before admission pain, with sudden onset in right iliac fossa. Loss of appetite and vomiting the next day, with increased severity of pain. Vomiting absent for two days, but recurring on morning of December 17th, 1905, when patient was admitted. Cœliotomy by displacement of rectus. A large abscess found in appendix region extending into pelvis. Appendix very adherent, and removed with difficulty. It was found to be gangrenous, with a large concretion in its lumen, and had to be taken away in three pieces, all of which were infiltrated and gangrenous, 10 c.c. of anticolon serum administered at end of operation and gastric lavage performed. Temperature, which before operation had been 101.4°, fell in six hours to 99.2°, but the pulse remained at the same rate as before operation, viz. 108 per minute. General condition on next day much better. No pain present. Calomel and repeated doses of mag. sulph. administered, bowels only open at end of 48 hours, during which time a further 35 c.c. of serum were administered. Condition during these two days remained fairly good, though patient became jaundiced. Pain was slight, and after bowels were open temporary improvement in pulse rate was observed, but temperature became subnormal during the succeeding 24 hours, the bowels were opened four times, and the pulse rate again exceeded 100. Temperature rose to 104° suddenly, just before death, which took place on the afternoon of December 21st. Pathological report: Pus contained *Bacillus coli*. P.M.—Peritonitis limited to right pelvic brim and the pelvic cavity, no extension among coils of small intestine. Pelvic abscess present, roofed in by matted omentum and coils of bowel. Appendix stump sound. Acute inflammation over intestines in right iliac fossa. Liver swollen and bright yellow, greasy on section; a few old splenic adhesions were present, the spleen being firm and red.

*Appendicitis, with local spreading peritonitis.*—Males 17; females 12. Died 10. Previous abscess 1; diffusion of abscess 2. Irreducible femoral hernia 1.

*Treatment.*—Appendicectomy, dry sponging, drainage, 19; appendicectomy, lavage, drainage, 7; appendicectomy, sponging, no drainage, 3. Re-drainage for general peritonitis 1; re-suture of abdominal wall 1. Anti-colon serum in 2 cases.

#### *Fatal cases.*

1. *Appendicitis; local spreading peritonitis; operation; pneumonia.*—R. G. C.—, male, æt. 23, ironmonger's assistant. First attack. Four days before

admission seized with acute pain in region of umbilicus. This rapidly spread to both flanks, and was accompanied by vomiting and constipation. The vomiting, however, ceased after the 2nd day, but the pain remained severe. Castor oil was given, but without result, and general condition became more grave. On admission abdomen was contracted and rigid. Palpation was painful but revealed no mass, the tenderness being most marked in right iliac fossa. Pulse 98; respirations 24; temperature 101. Appendicectomy, sponging, draining through incision in loin. Appendix, exposed by displacement of right rectus, was found overhanging pelvic brim and adherent to wall of pelvis. It was gangrenous and perforated near tip, containing a concretion. The entire mucosa was necrotic, and the peritoneal coat in places was extremely thin. Viscera in neighbourhood injected, but degree of peritonitis only slight. Operation brought temperature down to 98·8°, but pulse rate rose to 128, and patient only survived 2 days, a recurrence of the vomiting taking place with jaundice and severe pain in epigastrium. No action of the bowels was obtained, and patient was delirious. Temperature just before death 102·6°; pulse 160. P.M.—Slight plastic peritonitis, limited to submeso-colic region. Pleural sacs dry, with numerous small hæmorrhages beneath the visceral layers. Both lobes of left lung showed red hepatisation, the upper lobe of right lung being similarly affected. Liver fatty and nutmeg. Spleen large and firm. Kidneys showed cloudy swelling. Myocardium unusually pale and friable. No valve lesions. Pericardium healthy.

2. *Appendicitis; local spreading peritonitis; operation; early signs of pneumonia.*—C. K—, male, æt. 48, master tailor. Typhoid fever 4 years ago. Two attacks. First in June, 1904, with severe umbilical pain settling down into right iliac fossa. Bowels constipated; fever present; attacks lasted 7 days. Occasional pain in the interval between this attack and the 2nd, which began on April 11th, 1905, with severe pain in right iliac region. Vomiting repeated 3 or 4 times; bowels not open. Admitted 2 days later. Abdomen slightly prominent, especially in right iliac fossa, where respiratory movements were absent. Great rigidity of muscles, especially right rectus. Rectal examination negative. Pulse 124; temperature 100°; tongue furred. There was evidence that in the first attack an abscess had burst into the rectum. Immediate cœliotomy by displacement of right rectus. Appendix very adherent to posterior abdominal wall, surrounding coils of intestine inflamed. Appendicectomy by clamp. Appendix was gangrenous at the tip, showed well-marked interstitial inflammation, and contained a concretion near its proximal end, the lumen beyond this containing pus. Dry sponging and drainage. Mag. sulph. administered in drachm doses every hour after operation caused bowels to be well open. Temperature remained sub-normal for three days, and with the exception of considerable restlessness condition was fairly good. At the end of this time temperature rose suddenly to 101°, and bowels ceased to act in spite of enemata. Pulse was 108, and weak. Temperature remained high for 24 hours and then death occurred. P.M.—Peritonitis most intense in neighbourhood of cæcum, absent in upper segment and lesser sac. Practically no free fluid. Appendix stump sound. Heart showed some atheroma of both aortic and mitral valves. Both were, however, competent. A few left-sided pleural adhesions. Lungs showed acute congestive



stage of pneumonia in both right lower lobes. Left lung healthy. Vessels showed patchy atheroma.

**3. Appendicitis; local spreading peritonitis.**—R. M. M.—, male, *et.* 11, school. First attack. Three days before admission slight abdominal pain, chiefly in region of epigastrium, regarded as indigestion. Appetite unimpaired. The following day pain became more severe, patient remained up and about, but when walking it was noticed that he leaned over towards right side. Pain then settled down in right iliac fossa. Its severity increased, and that evening vomiting occurred and persisted throughout the night. The next day a definite swelling was observed by relations in right iliac fossa. Bowels open during attack, stools at first being somewhat loose. On admission, cheeks somewhat flushed, faint dark line present beneath the eyes; abdomen not distended, moving with respiration in its upper part, but not below the umbilicus. General tenderness on palpation, most marked in right iliac region and in flanks. The whole of right and lower part of left rectus rigid. Some rigidity also of the other muscles between costal margin and right anterior superior iliac spine. Percussion note in both flanks dull, the upper limit of dullness on right side extending from middle of flank to within 1 inch of the umbilicus and passing across the middle line obliquely downwards to the left. Liver dullness normal, no evidence of free fluid. Marked cutaneous hyperæsthesia over a small area in neighbourhood of McBurney's point. Rectal examination revealed tenderness on both sides of rectal wall, but no mass could be felt. Tongue coated with white fur; pulse full and regular, 128 per minute. Respirations shallow, 30 per minute. Temperature 101.2°. Immediate operation performed, and under the anæsthetic a definite mass could be felt on deep palpation in right iliac fossa. Coliotomy through right rectus. Turbid fluid escaped, and the mass felt under the anæsthetic was found to be omentum covered with lymph and adherent to the cæcum. The appendix was surrounded by omentum, and lay behind the cæcum with its tip directed upwards. The collection of fluid was found to have extended to the left beneath omental apron and in the pelvis. Appendix 3½ inches long, walls fleshy with infiltrated mucosa becoming gangrenous in many places near base, as well as in centre, where a perforation had been partly closed by lymph. This hole was situated at lower pole of "date-stone concretion" lying in middle of lumen. Appendicectomy, dry sponging, and drainage by incisions in both loins. At end of operation pulse was 98 and slightly irregular. Marked restlessness during night, patient complaining of great thirst. Vomiting occurred several times, and an enema in the early morning produced no result. Calomel and mag. sulph. in repeated doses were given, but neither fecal matter nor flatus were passed; 20 c.c. of anticolon serum were given on day after operation, and repeated every 12 hours for 3 more doses. The pulse-rate, which 24 hours after operation had risen to 120, fell during the succeeding day to 90, and restlessness diminished and facial aspect improved. Occasional sickness, however, was present, relieved by gastric lavage. Bowels open very freely on 4th day, and some degree of diarrhœa made its appearance and persisted for the next three days, during which time steady improvement took place. On the 8th day after operation temperature suddenly rose to 102.6°, and severe vomiting occurred, unrelieved by lavage of stomach. Face became drawn,

and there was considerable abdominal pain. Swelling of abdomen was noticed and respiratory movement was impaired. Pulse-rate rose in keeping with temperature from 96 to 120. A further 20 c.c. of serum was injected, and temperature fell to 100° in 12 hours, but the pulse-rate remained at 120, and general condition showed no improvement. Abdomen was reopened, the former incision being enlarged, and the peritoneal cavity was syringed out with saline through drainage-tube. A large quantity of pus was evacuated by fresh incision through left rectus. Many purulent collections were found in left iliac and lumbar region. Irrigation of intestines while in abdomen was carried out through these incisions. Condition at end of operation was bad, and a temporary revival took place only after saline infusion. The bowels were opened by enema, but the pulse became feebler, temperature dropped to 97°, and death occurred on 10th day. Patient's blood had shown a low opsonic index. No P.M.

4. *Appendicitis; local spreading peritonitis.*—G. S—, male, æt. 61, gardener. First attack. Two days' history of abdominal pain, with vomiting and constipation. State on admission: good movement in upper part of abdomen but bad in lower; patient lies at ease and jokes, but occasionally is seized with severe pain in right iliac fossa which alters his expression markedly. Great resistance in this region, no definite mass felt on palpation, percussion note everywhere resonant, liver dullness normal, tongue furred, lungs emphysematous, with abundant rhonchi to be heard all over the chest. Pulse 90. Appendicectomy, dry sponging, closure of peritoneum and posterior rectus sheath. Appendix easily found lying quite free. Removed after application of clamp to its base. Very slight, inflammatory exudation on coils of intestine exposed. Appendix 4½ inches long, congested, and red. Small perforation 2 inches from tip, walls gangrenous with interstitial infiltration. Two large concretions, each ½ an inch long, present together with several small ones. Drainage-tube left through fibres of right rectus. Temperature subnormal after operation, pulse 120. Frequent vomiting, extreme restlessness. Gastric lavage and purgatives produced no relief. Death occurred on 3rd day. P.M.—Slight peritonitis, chiefly around cæcum. No free fluid and no collection of pus. Stump of appendix sound. Lungs very emphysematous, both showed gross bronchitis with patches of broncho-pneumonia in right lower lobe. Kidneys granular.

5. *Appendicitis, local spreading peritonitis.*—A. F. C—, male, æt. 11. First attack; abdominal pain with vomiting for uncertain period. On admission distension of abdomen, with rigidity especially marked in right iliac fossa, poor respiratory movement, tongue furred, temperature 101·6°. Immediate celiotomy revealed considerable matting of intestines around appendix, which was long and enlarged towards its tip, which was gangrenous and perforated. An abscess, which had at first been pelvic, was found, with local peritonitis spreading upwards. The coils of intestine were covered with lymph, the appendix was removed, dry sponging of the bowel was effected, and drainage by gauze plug. Temperature next morning 99·3°, pulse 112, general condition somewhat improved; but during the next 24 hours vomiting recurred, in spite of cocaine and gastric lavage, and bowels were unopened, though calomel and frequent doses of mag. sulph. were given; an enema produced a slight result. Temperature again rose above 100° and the pulse rate became 148 shortly before death,

which took place about 50 hours after operation. Pathological report: No evidence of *Bacillus coli* in fluid from abdomen. P.M.—Diffuse peritonitis and evidence of older inflammation in pelvis, which was lined by tough, yellowish exudation. Lungs engorged, liver and kidneys showed slight cloudy swelling, spleen enlarged and soft. Stump of appendix sound.

6. *Appendicitis, local spreading peritonitis.*—R. D—, female, st. 40, machinist. First attack, with sudden onset of violent abdominal pain, four days before admission. Pain general and of gripping character, followed by sickness. Remained at work during first day. Bowels open but constipated, in spite of purgatives. Pain extremely severe on day before admission, when abdomen was observed to be swollen symmetrically and moving fairly well with respiration. Rigidity of both recti. Marked tenderness over right iliac fossa, with resistant, ill-defined mass. Percussion not dull in right flank, resonant elsewhere. Temperature 99°6', pulse 92. During next 24 hours temperature rose to 102° and pulse rate to 112. Abdomen opened on the morning of 3rd day—by spanning incision. Free offensive pus escaped on incision of peritoneum. Appendix somewhat adherent. Mesentery thickened, walls infiltrated in whole length. Perforation three quarters of an inch from base; gangrenous ulceration in rest of mucosa, with two almost perforated spots below the actual perforation, which was just above a concretion. Appendicectomy, local lavage, and drainage. Condition for 24 hours fairly good, at the end of which time temperature rose to 100°. Bowels unopened, in spite of purgatives; severe abdominal pain, with great restlessness. No action of bowels was obtained, and death took place on 5th day. P.M.—General peritonitis with most intense inflammation in appendix region, no large collection of pus, considerable matting of coils in right iliac region. Kidneys large, capsules adherent, cortex pale and mottled externally. Small, left-sided pleural effusion, left lung broncho-pneumonic, right healthy.

7. *Appendicitis with local spreading peritonitis.*—E. I—, female, st. 9. First attack. Five days before admission gradual onset of abdominal pain, with vomiting. The pain steadily increased and the vomiting recurred at frequent intervals. Diarrhoea present. For two days before admission patient lay on her back with both legs drawn up and complaining of such severe abdominal pain that the abdomen could hardly be touched. On admission very poor respiratory excursion, practically absent in lower abdomen. Both recti rigid, the right more so than the left. Liver dulness normal; marked tenderness all over lower abdomen; no mass found on palpation. Percussion note elicited dulness in right flank, which did not shift. Temperature 100°, pulse 164, respirations 32, tongue furred. Appendicectomy, lavage, and drainage. Free sero-purulent fluid found in neighbourhood of appendix, which was approached through right rectus. The appendix was gangrenous at its tip below a faecal concretion half an inch in length. Walls ulcerated as far as peritoneal coat on mesenteric border opposite this concretion. No actual perforation present. Some improvement after operation. Pain diminished; pulse 100, temperature 99°. For 48 hours condition remained fairly good, though enema yielded no result, but administration of calomel produced copious action of bowels, but pulse became more rapid and weak, death occurring 72 hours after operation. P.M.—Intense peritonitis over

both lower segments, with multiple small collections of pus. Lesser sac clean and upper segment but little affected. Pericardium contained a little lymph and purulent fluid. Heart showed dilatation of right auricle, with recent inflammation of mitral flaps. Tricuspid valve incompetent. Liver tough and nutmeg. Lungs showed early congestive stage of pneumonia at right base. Pathological report: Liver shows patchy cirrhosis, with necrosis of epithelium. In places it resembles acute yellow atrophy.

8. *Appendicitis; local spreading peritonitis.*—J. S—, æt. 32, male, shop assistant. First attack. Seven days' history of pain, with slight vomiting and constipation, until four days before admission. Slight redness of skin in right iliac fossa was observed, and over this area respiratory movement was deficient. Here, too, the percussion note was dull; rest of abdomen resonant. An indefinite mass could be felt in right iliac fossa. Temperature 101.2°, pulse 80. Coeliotomy through right rectus. A little pus present, but not shut off from peritoneal cavity. Appendix 2½ inches long, the distal third sloughing and gangrenous. Above this a small perforation, and above this again a fecal concretion; proximal two thirds healthy. Small bowel in neighbourhood of cæcum injected. Appendectomy, extroversion, lavage, and drainage. Intravenous infusion during operation. Condition the next day good, but the following day hæmoptysis occurred, a small amount of clotted blood being brought up. Fæcal fistula developed two days after operation, and was open for ten days. Some diarrhoea on 4th day, lasting for four days. Wound gaping on 6th day, exposing coils of small intestine. Edges approximated with strapping. Attack of epistaxis on 7th day stopped by plugging of anterior nares. This recurred the next day, and anterior and posterior nares were plugged. Slight bleeding continued, but was controlled by a Cooper-Rose bag. Temperature on 9th day began to ascend, and in three days reached 104°, there being slight hæmoptysis and a good deal of cough. Some dulness, with increase of vocal resonance at both bases, with crepitations both in front and behind. Condition showed little improvement during the next five days, temperature remaining two or three degrees above normal. Pulse over 100, and weak. Respirations over 40. Death occurred 17 days after operation. P.M.—General peritonitis, most marked in right iliac fossa. A few small collections of pus behind ascending colon. Stump of appendix sound. The right pleural cavity contained pus; lung collapsed and solid at its base, having the appearance of an infarct. Recent pleurisy on left side, with adhesions between base of lung and diaphragm, a large, ragged abscess cavity being present in this situation. Both lungs showed scars of old tubercles containing calcified nodules. Pathological report: Right lung shows fibrinous pneumonia, with abscesses; numerous staphylococci present.

9. *Appendicitis; local spreading peritonitis.*—G. R—, æt. 14, male, Turkish bath attendant. Patient had experienced numerous slight attacks before this one, which was characterised by more severe abdominal pain appearing three days before admission, with vomiting and tenderness in right iliac fossa. Pulse 128, respirations 28. Abdomen opened by displacement of rectus, a few drachms of foul-smelling fluid escaped. Appendix, which was acutely inflamed, was removed. All its mucous membrane was green and gangrenous; one stercolith was present in its lumen, but no perforation could be found. Coils of intestine

in its neighbourhood were washed over with saline and drainage-tube left in wound. Rise of temperature from 98·4° before operation to 100° after. Pulse 140, respirations 30. Condition of patient fairly good for three days, though bowels were only open by enema. At the end of this period temperature persisted at about 100°, pulse rate was 120, and distinctly weaker than before, while expression of patient became anxious. Action of bowels was obtained by mag. sulph. administered two-hourly, but vomiting recurred. On 6th day 30 c.c. of anti-colon bacillus serum were administered, but condition of patient was very bad at time of injection, and no fall of temperature resulted and no decrease in pulse rate. Death occurred the same evening. P.M.—General peritonitis, with large amount of purulent fluid in flanks. Intestines everywhere adherent; lymph abundant. No localised abscess. Mucosa of cæcum presented some catarrh. Liver fatty, spleen large and diffuent, with extensive deposits of lymph on its surface. Lower lobes of both lungs congested.

*Appendicitis with general peritonitis.*—Males 18; females 6. Died 17. First attack 20; second 4. Previous abscess 1; diffusion of abscess 1; residual abscess 1; parotitis 1; erysipelas 1 (see Special Table II).

*Treatment.*—Appendicectomy, lavage of peritoneum, and drainage, 10; appendicectomy, sponging, and drainage 10; coeliotomy, lavage, and drainage, 3; coeliotomy, lavage, drainage, and subsequent appendicectomy 1. Ileostomy 1. Incision of residual abscess 2; re-suture of abdominal wall twice in 1 case.

#### *Fatal cases.*—

1. *Appendicitis, with general peritonitis.*—S. J. E—, male, æt. 40, blacksmith. First attack. Previous health good. Five days before admission sudden onset of abdominal pain. Bowels constipated; vomiting commenced 2 days before admission, and persisted. Pain diminished. On admission tongue dry and furred; abdomen distended; respiratory movements bad. Resistance to palpation in right iliac fossa, with ill-defined tender mass in this region. Percussion-note impaired over this mass. Slight dulness in flanks, not shifting with movement of patient. Temperature 100°; pulse 104. Immediate coeliotomy through right rectus. Imperfectly localised abscess in relation with appendix, which was greatly swollen, with acute inflammatory infiltration and perforated near base. Appendicectomy, dry sponging, and drainage by means of rubber tube. No improvement in patient's condition; pulse rate increased and became weaker, death occurring 24 hours after operation. P.M.—Lower lobes of lungs much congested and in parts collapsed. Considerable emphysema present. Heart hypertrophied, especially on left side; valves healthy; muscle normal. Diffuse peritonitis was present below transverse mesocolon, most marked over coils of small intestine and in the pelvis, where a small quantity of pus still remained. Stamp of appendix sound. There was a horse-shoe kidney, the right segment being hydro-nephrotic; the ureter on this side appeared to end blindly at its junction with renal pelvis. A few rough black calculi lay in infundibula of the renal sac. Liver large and fatty.

2. J. F—, male, æt. 6, school. First attack. Three days' history of abdominal pain in appendix region preceded by a fall. Bowels constipated; vomiting. On admission face pale, eyes sunken, and expression very anxious. Abdomen greatly

distended and almost universally tender. Shifting dullness present in both flanks, tongue dry and furred; pulse 160; temperature 103°. An anæsthetic was administered preparatory to laparotomy, but patient ceased breathing, and operation was postponed till the next day, and during this period great restlessness was exhibited. Cœliotomy by displacement of rectus. Foul-smelling pus free in abdominal cavity. Appendix removed after placing artery forceps on mesentery and at base of appendix, as failure of respiration again occurred. Patient revived with the aid of artificial respiration and injections of strychnine and ether. Infusion was also performed, but no attempt was made to bury stump of appendix. Temperature fell to normal after operation, but condition of restlessness persisted in spite of hyoscine, morphia, and heroin. Vomiting occurred, and death ensued 48 hours after operation. P.M.—General peritonitis, most intense round cæcum and most marked in middle segment of peritoneal cavity. Lesser sac clean. Pus still present round cæcum and in right renal fossa. Left renal fossa and pelvis dry. No leakage had occurred from stump, and to the outer side of this were the remains of a pyogenic membrane, suggesting that the peritonitis was due to leakage of an abscess. Old adhesions present in right pleura. Other viscera healthy.

3. E. W—, female, æt. 10. First attack. Sudden onset 5 days before admission, with diarrhœa, followed the next day by constipation, subsequently relieved by purgatives. Vomiting occurred at onset and recurred daily. Difficulty of micturition on 1st day of illness and painful ever since. Abdominal pain general. On admission abdomen greatly distended, respiratory movement very poor in lower half, liver dullness diminished, evidence of free fluid in flanks, tenderness on palpation, though patient did not complain of pain. Temperature 99°; pulse 110; tongue dry and furred. Operation on day of admission. Small intestine, adherent to abdominal wall, opened during incision of parietal peritoneum. Appendix removed, found to be gangrenous. Much plastic lymph around cæcum and adjacent small intestine. Rubber tube fixed in ileostomy wound; dry sponging and drainage. No improvement after operation. Facies Hippocratica very marked; mental condition clear, patient complaining of little pain. Pulse 160, feeble. Very little discharge from tube in small bowel. Stimulants administered and saline infusion with adrenalin. No rallying power. Death 24 hours after operation. P.M.—General peritonitis with extensive matting of intestines and a little purulent exudate. Condition most marked around cæcum. Liver, marked fatty degeneration. Other organs normal.

4. C. G—, male, æt. 63, builder's foreman. First attack three days before admission with pain all over abdomen. Vomiting twice on the following day, when the pain settled in right iliac fossa. Vomiting again occurred twice on 3rd day of illness, when patient came to hospital. Abdomen prominent, especially in right iliac region. Respiratory movement practically absent in lower half. General tenderness and rigidity of abdominal wall. No swelling detected by palpation. Percussion note slightly impaired in flanks and right iliac region. Tongue furred, pulse 84. Cœliotomy through right rectus, fœtid pus encountered. Marked discoloration of intestinal coils with abundant lymph. Appendix kinked on itself about middle of length, dark grey in colour, containing 2 fœcal concretions; walls gangrenous, with perforation at distal end. Removal by

clamp. Lavage of intestines with saline, drainage by glass tube. No vomiting occurred after operation, but no action of bowels was obtained though frequent doses of mag. sulph. were given. Pulse rate rose to 112, temperature after a slight rise became subnormal, and death occurred on morning of 8rd day. P.M.—Body showed extreme decomposition. Lungs black and gorged with blood and sodden by œdema. Puckered cicatrix at posterior part of right upper lobe. General peritonitis involving both greater and lesser sacs, most marked in right iliac region. Liver fatty, kidneys showed cloudy swelling.

5. T. M—, male, æt. 40, hairdresser. First attack. Dyspepsia present for long period. No vomiting or hæmatemesis. Two days before admission sudden attack of violent pain while in bed, starting in lower part of abdomen and spreading all over it. Sickness followed and pain increased. Bowels open on day of onset but not afterwards. On admission deficient respiratory movement in lower abdomen. Dulness in both flanks, small lump felt in right iliac fossa, tongue furred, pulse 116, respirations 30. Incision made over McBurney's point and a quantity of foul-smelling pus evacuated. Wound drained, no search for appendix. Following day abdominal tenderness was still present all over abdomen. Movement still impaired. Vomiting on night of operation, a quantity of coffee-ground material being brought up. Wound draining well. Bowels opened by enema. Sickness recurred the next day and later patient was much troubled with flatus. Bowels opened freely. Five days after operation condition of pulse was so weak that 2 pints of saline were infused into vein, followed shortly by rise of temperature to 101.2°, accompanied by slight rigor. Frequent vomiting present during this period. On 7th day right-sided parotitis observed. Condition of patient showed improvement, and abdominal tenderness diminished. Appetite good. Semi-solid food taken. Parotid incised. After this, though abdominal condition improved, appetite began to fail, and patient declined to attempt to eat, and was therefore put on rectal feeding. From this time condition relapsed, face became more sunken, considerable fulness was present in both iliac fossæ, the discharge from wound diminished but was blood-stained. Temperature rose 6 hours before death to 103°, and the case terminated on 20th day. P.M.—All coils of intestine matted together by recent adhesions. On separating these, numerous collections of pus were found; nearly a pint of thick, creamy pus present in pelvis. The greater part of the appendix apparently had sloughed away, and while the stump was pervious for a quarter of an inch its free end was completely closed. Liver fatty, lungs congested and œdematous.

6. D. J. G—, male, æt. 25, basket-maker. First attack. Twelve days before admission slight pain in right iliac fossa. Pain continued for a week and patient felt out of health. Bowels constipated and not opened by purgatives. Slight improvement was noticed and then, 2 days before admission, severe pain was experienced accompanied by vomiting. The pain radiated all over abdomen and was especially severe in appendicular region. On admission respiratory movement bad, especially in lower abdomen, where rigidity and tenderness were well marked. There was dulness on percussion in left flank. Eyes sunken, tongue furred, expression anxious. Pulse-rate 118, temperature 99°. Abdomen opened through right rectus. Clear fluid escaped on incision of parietal peri-

toneum, which was somewhat adherent to the gut. The appendix was found lying in abscess cavity surrounded by adhesions behind coils of small gut. The appendix was clamped, ligatured, and removed, being adherent to the cæcum; local lavage and drainage. Condition after operation very bad: persistent vomiting, black in colour, not relieved by lavage of stomach. Bowels unopened in spite of enema and purgatives. Pulse-rate on 4th day 144 and very weak, temperature subnormal; death on this day. P.M.—Stump of appendix allowed passage of probe from interior of cæcum into abscess cavity, but was not pervious to water test. Marked fibrinous adhesions in appendix region, not enough to shut off general peritoneal cavity from site of abscess. General fibrino-purulent peritonitis present, most marked in pelvis and around spleen. A large collection of pus between transverse colon and small intestine beneath it. Lesser sac clean.

7. A. La R—, male, æt. 15, office boy. First attack. Four days before admission sudden attack of abdominal pain. This increased, and for 48 hours before coming to hospital patient had vomited persistently, and the pain was most severe on right side of abdomen. Bowels open regularly. Painful micturition on day of admission. Hippocratic facies, abdomen distended, bad respiratory excursion, resistance over area just above pubes. Note on percussion in right flank impaired. Resonant in left flank. Liver dulness normal. Heart and lungs healthy. Tongue thickly coated with dirty-grey fur. Pulse 138, temperature 100·2. Patient was sick after admission to ward, and the vomit was dirty, blackish green in colour. Appendicectomy, lavage, drainage by displacement of rectus. Appendix gangrenous, with gangrene of adjacent portion of omentum, which was ligatured and removed; pelvis full of pus. Death 3 hours after operation. P.M.—Mucous membrane of cæcum oedematous and inflamed. Diffuse general peritonitis, with offensive yellow fluid and thick lymph all over abdominal cavity, except in lesser sac, where only a few adherent pieces of lymph were present. Foramen of Winslow sealed by adhesions. No evidence of attempt at localisation of abscess in neighbourhood of appendix. Liver and kidneys showed cloudy swelling. Lungs very congested with dark blood. Other organs healthy.

8. L. H—, female, æt. 17, clerk. Past history: Abscess incised in right groin two years ago; after discharging for 12 months this healed up. Recurrence of swelling in this region with pain three days before admission. On examination an inflammatory swelling was observed in right groin; no fluctuation was present and no impulse on coughing. Temperature was 101°, pulse 120, respirations 24. The next day incision was made over this swelling, which was found to be composed only of inflamed glands; the wound was therefore closed. The following morning vomiting occurred several times, the vomit being black in colour and offensive in odour. Temperature was 102·6°, pulse 120, respirations 36. The abdomen was opened in mid-line above the pubes and free pus was found in peritoneal cavity. The Fallopian tubes showed inflammation only of outer coat. Incision was therefore made over appendix, and this was found to be very adherent, perforated, and a concretion was found free in abdominal cavity. Removal of the appendix was judged to be undesirable and lavage of the peritoneum was performed, a drainage-tube being passed into pelvis and another



to site of appendix. Patient did not survive many hours. P.M.—General peritonitis with purulent exudate, the intestines being congested and adherent to one another, covered with plastic lymph. Dense adhesions were present on outer side of cæcum, where the appendix lay, with perforation close to tip. The appearance suggested that localised abscess had been present and had ruptured into peritoneal cavity. Lungs showed congestion; other organs also congested.

9. W. S—, male, æt. 48, police pensioner. First attack. Severe abdominal pain for seven days. Frequent sickness, vomiting not fæculent. Bowels open every day till 24 hours before admission; stools liquid; aggravation of symptoms for 12 hours before coming to hospital. On admission abdominal facies, with marked distension and general tenderness all over lower abdomen. Respiratory movement absent in lower portion of abdomen; no definite mass felt on palpation. Liver dulness normal; slight shifting dulness in flanks. Rectal examination negative. Pulse 152, weak; respirations 44; tongue dry and furred. Immediate cœliotomy through left rectus. Free pus in abdominal cavity, with marked congestion of intestines and some lymph. Appendix gangrenous and surrounded by an abscess cavity, which contained its tip. Proximal part was also gangrenous and the appendix was removed, the stump being invaginated into cæcum. Lavage with saline and tube-drainage. Death occurred within a few hours afterwards. P.M.—Peritonitis limited to pelvis and sub-mesenteric segment. Evidently in the pelvis there had been an abscess of some standing. Liver very pale, fatty, and rather tough. Kidneys showed cloudy swelling and were cardiac. Lungs cedematous, with apical adhesions. Pericardium universally adherent to heart and externally adherent over a small area to right lung. Heart enlarged, valves competent. Myocardium fatty and friable.

10. J. S—, male, æt. 9, school. Enteric fever three years ago. Past health otherwise good. First attack. Severe abdominal pain of four days' duration, noticed chiefly on the right side. Vomiting for three days. Free action of bowels obtained by administration of castor oil. Increasing pain, tenderness, and sickness up to time of admission. Abdominal movements on respiration practically absent. Great tenderness on palpation all over abdomen, increased on right side. Pulse about 120, respirations rapid. Cœliotomy by displacement of right rectus. Large amount of pus free in peritoneal cavity. Cæcum adherent to posterior abdominal wall; could not be delivered. Appendix wrapped round by inflamed omentum with much organised lymph on its surface. Lymph also present on surface of appendix, which was perforated close to mesenteric border. This had occurred in area of gangrenous ulceration around a concretion. Small concretion with less degree of gangrenous ulceration at tip; intervening area acutely inflamed. Mucosa above proximal concretion showed slight catarrh. Appendicectomy, dry sponging, and drainage with opening in right loin. Infusion carried out during operation. Pulse, after operation, 148; temperature 98.8. Twenty c.c. of anticolon serum given on night of operation. The following morning abdomen still painful and distended; marked drowsiness present; 60 c.c. of serum given in next 24 hours. Action of bowels slight after enema; well open on 4th day after administration of mag. sulph. in drachm doses. A special feature of the case was the extreme restlessness alternating with short spells of drowsiness. This restlessness was noticeably relieved by the injections

of serum, which were repeated on four successive days after the operation; 50 oz. of saline were again introduced into veins on the third night. Temperature nearly normal on 7th day, pulse rate 100, respirations 20 per minute. Following day temperature rose to 101° and the pulse rate increased to 140. Serum again injected. Beyond the fact that pulse rate fell to 120, the serum appeared to have little effect, and on the night of the 11th day temperature was 103°, the abdomen was more distended, and slight œdema of the abdominal wall was present in left flank. Some dulness on percussion in this region was observed, and there was marked tenderness. Apart from this, patient slept and took food fairly well; the tongue was moist and clean and the bowels were open. Abdomen opened in left flank. Large perisplenic abscess found, containing offensive pus; wound drained by incision in loin. Condition next day showed slight improvement. Discharge from all wounds abundant. Four days later appetite began to fail; pulse was 128, though temperature had temporarily fallen to 98·8°. Facial aspect bad. From this time onward patient gradually sank, tubular breathing and signs of consolidation at the left base were noticed, and death occurred on the 20th day. Pathological report.—Films taken at first operation showed presence of bacilli and cocci. Subsequent cultures yielded colon bacillus and a Gram-positive staphylococcus. P.M.—Marked emaciation. General peritonitis, with matting together of small intestine and colon. Matted coils very soft and friable. Stump of appendix sound. Perisplenic abscess successfully drained. Liver and kidneys showed cloudy swelling. Spleen shrunken. Lungs showed mixed broncho-pneumonia with much collapse. Bronchial glands showed old tuberculous deposits. Other viscera normal.

11. T. M—, male, æt. 59, saw-mills foreman. Past history: similar to present one 24 years ago, with pain in the lower part of abdomen for 1 week, accompanied by vomiting and constipation. Pleurisy seven years ago. Second attack with sudden onset of violent pain in lower abdomen following a heavy meal four days before admission. Pain followed by vomiting, which was repeated at frequent intervals. The pain, which had at first been general, became localised to right iliac fossa. On admission all the signs of general peritonitis were present with marked tenderness and resistance in right iliac fossa. Immediate appendectomy, sponging, and drainage; the appendix was perforated and free pus was present in the peritoneal cavity, the organisms present being the colon bacillus and a Gram-positive staphylococcus. Pulse after operation was very feeble and 120 per minute, temperature rose suddenly to 103°, and death occurred very shortly afterwards. No P.M.

12. J. B. Y—, male, æt. 29, butcher's assistant. First attack. Four days before admission sudden onset of severe abdominal pain not localised to any region. The following day diarrhœa was present, but bowels were unopened for two days before admission. Vomiting occurred several times on 4th day of illness, but not since. On examination abdomen distended and rigid; respiratory movement very slight; tenderness on palpation to slight degree but not localised. No mass to be felt. Temperature 99·1°, pulse 108, respirations 28. Cœliotomy by displacement of right rectus outwards. Small quantity of odourless fluid present in peritoneum, and in neighbourhood of appendix a little foul-smelling pus. Appendix removed, found to be gangrenous, with perforation near its base. Dis-

tended colon drained through small incision, which was closed with Lembert's sutures. Peritoneum dry sponged, wound drained. Very little discharge from wound, temperature remained normal or just below, pulse 104, persistent vomiting temporarily relieved by gastric lavage, bowels not open after operation, though saline purgatives and enemata were given. Death on second day. No P.M.

13. *Appendicitis; intra-peritoneal abscess; general peritonitis*.—E. S—, female, æt. 10, school. Two attacks. First, six months ago, began with acute generalised abdominal pain, afterwards localised to right iliac fossa, and accompanied by constipation, vomiting, and fever. This condition lasted about a fortnight, when a profuse discharge of pus from the anus took place, and the symptoms were relieved. Present attack began 14 days before admission, and symptoms were precisely similar to those of the former attack, with the exception that the bowels were opened on several occasions naturally. On examination, a well-nourished, pale child, the face being anxious and the eyes sunken. Tongue dry and covered with thick brown fur. Abdomen distended, with greatly diminished respiratory movement in lower part. Percussion note dull in right flank and right iliac fossa, resonant elsewhere. Abdominal muscles rigid, dull area very tender on palpation. Rectal examination revealed hard, tender mass in right iliac fossa. Pulse 116, respirations 32, temperature 99°. The following morning the abdomen was noticed to be more distended, and the area of dullness had extended to the mid-line. Respiratory movement absent. Operation 24 hours after admission. Passage of a catheter withdrew urine containing blood and dark pus. The urine before operation had been quite clear. Cœliotomy through right rectus revealed abundant offensive pus in a cavity which passed down into pelvis; it was partially shut off from abdomen above by adhesions. Cavity was irrigated and sponged, and drainage effected through the wound and by incision in right loin. The appendix was not felt. In the evening of the same day the child was very collapsed and intravenous infusion was performed, and shortly afterwards 20 c.c. of anti-colon serum were injected, but no improvement took place; the pulse-rate and temperature both rose steadily, reaching 160 and 105° respectively, death occurring about 18 hours after operation. Films from peritoneal fluid showed large numbers of bacilli and cocci. P.M.—Intestines matted together by firm adhesions, similar adhesions binding liver to abdominal wall. Appendix lay on pelvic brim firmly bound down, the last inch having practically no lumen, while the proximal part contained a fecal concretion and showed signs of former perforation, 1 inch from tip. Some large calcified glands were present in root of mesentery. Remainder of bowel was healthy. Other organs normal.

14. *Appendicitis; general peritonitis; streptococcal*.—F. S—, female, æt. 12, school. First attack. Onset rather gradual, with vomiting and diarrhoea. Diagnosis of typhoid fever made, patient transferred from fever hospital for operation. Eight days' history. On admission very collapsed. Abdomen distended generally with very deficient respiratory movement, nothing definite to be felt on palpation, owing to rigidity; no definite area of tenderness. One injection of morphia given before admission. Temperature 103°, pulse 160, very feeble; respirations shallow, 40 per minute. Cœliotomy through right

rectus revealed a quantity of purulent fluid; intestines not distended, but universally covered with lymph, most abundant in neighbourhood of right iliac fossa, but present also on diaphragmatic surface of liver. Appendix appeared slightly inflamed and was removed. Lavage of peritoneum and drainage of wound. Condition very little improved, temperature 24 hours after operation 101°, pulse still 160, and respirations 48. Bowels not open after operation; temporary improvement resulted from infusion, but vomiting persisted, and death occurred 30 hours after operation. Pathological report: culture from peritoneal fluid yielded pure growth of *Streptococcus pyogenes*, present both on surface of appendix and on peritoneum at a distance. Appendix showed erosion of mucous coat, with acute inflammation extending throughout all its layers. Large numbers of organisms present throughout the appendix, diplococci and streptococci. These organisms were present also in the blood-vessels. P.M.—Widespread plastic peritonitis in all segments, most marked in left renal fossa and between diaphragm and liver on right side. A little free fluid was present in renal fossae and pelvis. Exudate had no odour. Massive sheets of lymph were present. Mesenteric glands were large and fleshy. No lesions of intestinal mucosa found. Pelvic organs healthy. Liver showed numerous yellow areas of necrosis. Acute plastic pleurisy at both bases of lungs, with sheets of lymph similar to those in peritoneum. Lungs showed congestion at both bases, airless on the right side.

15. A. D—, male, æt. 16, telegraph messenger. ? First attack. Severe abdominal pain three days before admission, starting in umbilical region and spreading over abdomen. Vomiting and constipation both present. Patient returned to work the next day, but was again seized with pain, increasing up till time of admission. Vomiting marked, bowels not open. Pain on micturition for two days. On admission, very anxious expression, abdomen distended, rigid, and extremely tender on the slightest pressure. Shifting dulness present in flanks, pain most acute in right iliac fossa. Temperature 102°, pulse 142, and very weak. Immediate coliotomy revealed a quantity of thin, purulent, offensive fluid. Appendix was gangrenous and perforated, and appendicectomy was performed. Peritoneal cavity of the pelvis was sponged, and drainage of wound established. Survival for only 12 hours, temperature rising to 103·8° shortly before death. P.M.—Severe general peritonitis, without involvement of lesser sac. Liver rather fatty; lungs congested and œdematous at their bases. Early decomposition.

16. W. C—, male, æt. 12, school. First attack, with acute onset of severe pain in lower part of abdomen, four days before admission. Vomiting occurred the next day after medicine. Pain relieved for 24 hours, but recurring with greater severity at the end of that time. Micturition very painful. On admission: pale, delicate-looking boy, in collapsed condition, with some distension of abdomen, which had no respiratory excursion in lower half. Dulness of flanks, with fine, fluid thrill. Bladder formed a small tumour above pubes. Liver dulness did not quite reach costal margin. Extreme tenderness present on palpation of abdomen, especially over region of appendix. Tongue moist, but thickly coated with fur. Temperature 101°, pulse 140, respirations 36. Immediate coliotomy by displacement of rectus. Coils of bowel in right iliac fossa, and, as

far as could be felt, were firmly matted together. On separating these an abscess was found in relation with the appendix, extending into the pelvis. Appendicectomy. The appendix was very long and gangrenous. Dry sponging and drainage of peritoneum. Temperature after operation  $97.2^{\circ}$ , pulse 118. Rapid rise of temperature to  $100.2^{\circ}$ , with increase of pulse rate to 140. Bowels unopened. Further rise of temperature to  $102^{\circ}$ , with no power of recovery. Death within 36 hours of admission. P.M.—Diffuse peritonitis, with but little exudation. Slight inflammation of lesser as well as of greater sac. Inflammation most marked in right iliac fossa. Right kidney healthy, but double the normal size. Left kidney hydronephrotic, with a small amount of healthy renal tissue remaining. Ureter dilated to size of a thumb, and bladder orifice not obstructed. Possibly a calculus had been passed. Viscera showed cloudy swelling.

17. L. R—, female, *æt.* 19, servant. First attack. Three days before admission vague pain in abdomen, increasing in severity. Bowels not open; increasing tenderness of abdomen on pressure. Vomiting occurred the next day, and the vomiting, pain, and constipation continued till admission. Immediate cœliotomy was performed, the appendix being removed, lavage with saline carried out, and drainage effected. A condition of general diffuse peritonitis was present, the appendix being gangrenous and perforated. Temperature after operation fell to  $97^{\circ}$ , pulse was 136, and condition of patient was desperate. Survival for only 24 hours in spite of stimulants and administration of saline with adrenalin *per rectum*. P.M.—Body emaciated. General plastic peritonitis, with collection of pus around right kidney and in pelvis. Organs rather fatty and showing cloudy swelling.

### INTESTINAL OBSTRUCTION.

*Obstruction by adhesions.*—Males 2; females 8. Died 5. Acute 8; chronic 1. Tuberculous mesenteric glands 2; after appendicitis 2; after appendicitis with general peritonitis (operation) 1; after tubal inflammation 1; pericæcal 1; pericolic (? carcinoma of colon) 1. Perforated cæcal ulcer 1. Death from acute dilatation of stomach in one case. Chronic peritonitis 1. ? Renal.

*Treatment.*—Cœliotomy and enterolysis 7; cœcostomy 1; ileostomy 2.

#### *Fatal cases.*

1. *Acute intestinal obstruction; Pericæcal adhesions.*—M. S—, female, *æt.* 79, widow. Family history good. Dyspepsia for 18 months; one year ago severe attack of abdominal pain, lasting for only a short time. Health remained perfectly good until 12 days before admission, when severe pain was felt in right iliac fossa. Vomiting occurred 2 or 3 times, and diarrhoea was also present. No blood ever passed in motions. On admission abdomen distended, respiratory movement poor. Great tenderness on palpation in right iliac fossa and lumbar regions. A large mass was felt in right iliac fossa. No visible peristalsis, no evidence of free fluid. Percussion note in right iliac fossa dull. On skull, back, and legs were scars apparently the result of syphilitic necrosis of bone. Cœliotomy was performed, and a hard fixed tumour was found in right iliac region. It was thought to be carcinomatous, but removal was impossible; the ileum was

therefore opened and ileostomy performed by means of Paul's tube. Wound around tube became blackened and gangrenous. The tube sloughed out on 7th day, and extensive reddening and oedema of the skin was observed to the right of wound. A faecal fistula subsequently developed in this area where the abdominal wall broke down, leading to an abscess cavity external to the site of artificial anus. Patient became progressively weaker, and death occurred at the end of four weeks. P.M.—Very fat subject. Large gaping wound, with gangrenous margins on right side of abdomen, where an extra-peritoneal abscess had ruptured, the pus having travelled along both femoral and inguinal canals by the former route, reaching the middle of posterior aspect of femur. Colon was collapsed, and round the caecum were numerous dense adhesions. The appendix was retro-caecal and adherent. No evidence of perforation of this organ could be detected. The caput caeci and first portion of ascending colon with lower part of ileum had been compressed by these adhesions, which existed also around site of artificial anus. The organs were atrophic. Pathological report: No evidence of carcinoma, the caecal wall shows small-celled infiltration of mucosa and fibrosis of submucosa and muscularis.

*2. Acute intestinal obstruction; small intestine; adhesions to tuberculous glands; acute dilatation of stomach.*—E. N.—, female, æt. 22, married. Past history good. Four days before admission sudden attack of vomiting with great collapse. Doctor summoned and patient infused. Severe abdominal pain present, bowels only opened by enema. Vomiting was unrelieved, and the day before admission the vomit was faeculent. On examination the eyes sunken, lips pale, expression anxious. Tongue furred, radial pulse almost imperceptible, rate 200 per minute; heart sounds feeble, no murmurs. Abdomen slightly distended, moving well with respiration. Percussion note everywhere resonant. No visible peristalsis, slight tenderness on palpation, no localised resistance or mass to be felt. Stimulants administered, condition improved both as to pulse and general aspect. The vomiting, however, persisted. Transferred to Surgical side, abdomen opened by displacement outwards of right rectus. Caecum collapsed. Band of adhesions found passing from neighbourhood of caput caeci to tuberculous mesenteric glands, tightly constricting the ileum a few inches above ileo-caecal valve. A band of adhesions divided between ligatures. Distension of small intestine relieved, abdominal wound closed. Infusion performed during operation. For 24 hours condition was fairly good. Enema given with fair result. Pulse still rapid, 130 per minute, temperature normal. At the end of this time relapse occurred, but condition improved after second intravenous infusion, but the following afternoon rather sudden collapse was observed, the pulse-rate rapidly increasing from 130 to 178, and the vomiting, which had been present at intervals before this, ceased, apparently owing to patient's inability to eject stomach contents. Death on evening of third day. P.M.—Slight peritonitis, practically confined to middle segment. Small bowel still distended in upper portion. Situation of constriction by adhesions still obvious. Large caseating gland found in its neighbourhood 1 inch from the caecum. No further obstruction was found, but great dilatation of both stomach and duodenum were present. The dilatation of the stomach had occurred upwards and backwards beneath the liver and downwards behind the distended small bowel. This acute dilatation

of stomach was apparently the cause of death as the other organs were all healthy.

3. *Acute intestinal obstruction ; ? carcinoma of colon ; adhesions ; perforated stercoral ulcer of cæcum.*—M. H—, female, æt. 61, widow. Good health until six weeks before admission, when patient first experienced abdominal pain, referred to umbilicus. Partial obstruction for 10 days, complete for 1 week with constant vomiting and severe pain. Enemata had been administered without result. On admission abdomen distended, especially in lower half. Respiratory movements poor. Visible peristalsis from left to right in lower abdomen. Considerable tenderness, most marked in right iliac region. No tumour could be felt, tongue coated with fur, pulse 74. Immediate cœliotomy by displacement of rectus revealed perforation of cæcum. Fæcal extravasation was present; the peritoneum was cleansed with saline and sponging, and a Paul's tube was tied into the cæcal perforation. Condition for two days after operation was fairly good, but at the end of this time artificial anus ceased to work, vomiting made its appearance, and the pulse became rapid and feeble. Death with subnormal temperature on 5th day. No P.M.

4. *Acute intestinal obstruction ; small intestine by adhesions ; chronic appendicitis.*—H. J—, male, æt. 19, bootmaker. Two attacks of appendicitis, the first 6 years ago, second 3 years later. Patient had been ill for 5 weeks before admission, suffering from constipation, which was relieved by administration of enemata. Five days before admission sudden onset of severe abdominal pain, with vomiting, the vomit becoming stercoraceous. Constipation absolute during this period. State on admission: marked collapse present, abdomen motionless and tender; no shifting dullness in flanks, but percussion note was dull in lower part of abdomen and in left lumbar region. Tongue thickly coated, pulse 116, feeble. Immediate cœliotomy was performed, the intestines being found densely adherent to one another. Enterolysis was performed as far as possible, but owing to grave condition of patient the abdomen had to be hurriedly closed. Infusion carried out during operation and gastric lavage shortly afterwards. Suppuration of wound occurred, but condition was fairly good for four days, when profuse diarrhœa set in and lasted for 3 days. Vomiting occurred on 7th day, and it was repeated on successive days. Temperature after this rose to 100°, at which level it persisted until 10th day, when jaundice was first observed. Temperature became subnormal, and pulse more feeble, there was a recurrence of the diarrhœa, and death occurred on 12th day. No P.M.

5. *Acute obstruction ; chronic peritonitis, ? renal in origin ; enterolysis ; ileostomy.*—S. B—, male, æt. 60, ostler. Hernia present in left groin for 15 years. Œdema of face and frequency of micturition for 3 years. Constipation 5 weeks, distension of abdomen without any action of bowels for 14 days. Vomiting for 2 days. State on admission: Abdomen generally distended and tense. Coils of intestine felt through abdominal wall. No visible peristalsis, percussion note resonant except for slight shifting dullness in flanks. No mass felt on palpation, nothing abnormal detected on rectal examination. On day of admission to Medical side one small stool was passed, but vomiting was persistent and the vomit stercoraceous. Operation was performed the next day,

and on opening abdomen considerable amount of clear fluid escaped from peritoneal cavity. The lower 4 feet of ileum were collapsed. The rest of the small gut was distended. The intestinal coils were matted together by thick layers of lymph and in many situations the intestine was acutely kinked. The lymph was as far as possible removed and enterolysis effected. The appendix was tightly bound to posterior aspect of cæcum and was not disturbed. Distension of the large intestine was relieved by trocar and cannula, half an ounce of mag. sulph. being introduced into its lumen. Operation completed by ileostomy with small Paul's tube about 2 feet above ileocæcal valve. Artificial anus worked well, but pulse was rapid and weak and secretion of urine was greatly diminished. Very little power of recovery was exhibited, and death ensued 24 hours after operation. Microscopical report: Flakes of lymph showed no evidence of tubercle, no bacilli seen in films prepared from lymph. P.M.—Body well nourished. Abdominal cavity contained 32 oz. of clear serous fluid. Surface of intestine universally roughened and covered with flakes of lymph. Peritoneum, both parietal and visceral, much thickened all over abdomen. Mucous coats of intestinal tract healthy. Mesenteric glands normal. Liver and spleen showed superficial capsulitis. Kidneys contracted and granular. Vessels markedly thickened. Pericardium contained a little clear serous fluid. Left ventricle somewhat enlarged, walls thickened. Atheroma at root of aorta and thickening of aortic valve flaps. Valves competent. Right pleural sac contained 30 oz. of clear serous fluid and left sac contained a little similar fluid. Both lungs oedematous.

*Obstruction by bands.*—Females 5. Died 3. After abdominal hysterectomy 1; oophorectomy 1; vaginal discharge 1; broad ligament acting as band 1. Also carcinoma of hepatic flexure in 1 case.

*Treatment.*—Cœliotomy and enterolysis in all. Subsequent resection of small intestine and ileostomy 1. Sequestration of portion of bowel wall 1. Incision of abscess beneath scar 1.

#### *Fatal cases.*

1. *Acute intestinal obstruction by band; small intestine; carcinoma of hepatic flexure.*—F. W—, female, æt. 66, widow. Family history negative. Right ovary removed 5 years ago for cystic adenoma. Four severe attacks of abdominal pain with vomiting and constipation during last 3 months. Health good between attacks. Admitted with 2 days' history of severe abdominal pain, with vomiting and absolute constipation. Temperature 99·8°, pulse 132. Enema produced no result. Cœliotomy on 3rd day. Band due to adhesion between small intestine and right broad ligament had obstructed small bowel by its traction and on division of this band contents of small bowel were passed freely along its lumen. Patient's condition was unaltered by operation, bowels not being opened on administration of enema. Vomiting continued as before operation. Wound was reopened 2 days later and transverse colon was found collapsed. Growth was discovered occupying hepatic flexure of colon and cæcum was fixed to parietes. During the operation it was found that mesentery of small bowel was torn about 4 feet from ileocæcal valve, 2 inches of small gut were therefore resected and a Paul's tube fixed in either free end. Patient's condition during operation was desperate and no power of recovery was



exhibited, death taking place the same day. P.M.—No peritonitis was present, no free fluid, and no noticeable distension of gut, but large intestine was collapsed from hepatic flexure onwards. Rupture in mesentery had extended about 3 inches. An annular growth was found at hepatic flexure almost completely occluding orifice. Growth extended  $1\frac{1}{4}$  inches in the longitudinal direction and was considerably ulcerated. No metastases present. The gut was rather rotten. Liver extremely fatty; heart showed fatty changes in papillary muscles. Pathological report: Columnar-celled carcinoma.

2. *Acute intestinal obstruction; small intestine; band.*—C. C—, female, æt. 65. History: Five days' obstruction, with vomiting and universal pain over abdomen. Pain had sudden onset and the vomit was fæculent. The pain was noticed most in right iliac fossa, and in this situation it had originated. On examination abdomen somewhat distended and tender on palpation. Recti rigid, with very little respiratory movement. No tumour felt on palpation; rectal examination revealed a mass felt through right lateral wall. Pulse 120, temperature normal. Immediate cœliotomy revealed great distension of small bowel, with strangulation by a band in right iliac fossa. The bowel wall was unhealthy in part of its circumference. The band was divided and doubtful portion of gut was sequestered with Lembert's sutures. Abdominal wound closed. Condition did not improve; bowels were unopened after operation, and pulse became gradually feebler, death occurring 36 hours after operation. No P.M.

3. *Acute intestinal obstruction; large intestine by band; left broad ligament.*—S. K—, female, æt. 57, married. Four years' history of recurrent violent attacks of abdominal pain, occurring three or four times yearly and lasting usually about five hours. Three days' history of acute pain in abdomen, with vomiting and complete obstruction. Constipated for five years. On admission abdomen distended, with definite prominence below and to left of umbilicus. Respiratory movements fairly good, visible peristalsis, percussion note over whole abdomen tympanitic. Immediate cœliotomy revealed a loop of pelvic colon greatly distended, its proximal and distal ends being obstructed by a band. This band was found to be the broad ligament which was attached to a left-sided ovarian cyst, compressing the gut by passing over it to gain adhesion to the cyst which was situated just behind the pubes. The tube and ovary of the left side were thus removed and the ovary was represented entirely by this unilocular cyst, containing pale hæmorrhagic fluid. The contents of intestine flowed on freely and the abdomen was closed. Condition after operation was good and convalescence was normal, except for some diarrhœa and fever. Temperature on fifth day reached  $102^{\circ}6'$ . The stitches were removed on 8th day and a suppurating hæmatoma was found beneath wound. Three days later more pus was let out by incision through scar. Temperature after this persisted for ten days at about  $102^{\circ}$ . Patient was greatly troubled with flatulence, and the wound looked very unhealthy, death occurring on 21st day. P.M.—No general peritonitis, but extensive matting of intestines and pelvic viscera. An abscess cavity was found in the pelvis localised by adhesions. Stump of left uterine appendages healthy. Right tube slightly dilated, containing thin pus. Wall of uterus showed numbers of small abscesses. Intestines were healthy with exception of pelvic colon, which was darkly congested and friable. This condition was present to some degree also in descending

colon, the vessels of which were thrombosed. Mucosa here was congested and softened. Both pleuræ contained a little serous fluid, and numbers of small abscesses were present in the lungs without surrounding areas of consolidation. Bronchial glands enlarged and softened, remaining organs healthy.

*Obstruction by adherent Meckel's diverticulum.*—Males 2; died 1. Diverticulum adherent to mesentery in both cases. Gangrene of intestine 1.

*Treatment.*—Amputation of Meckel's diverticulum, enterolysis 2; resection and axial anastomosis 1; subsequent attempted re-suture of bowel 1.

*Fatal case. Acute intestinal obstruction; strangulation of small intestine by Meckel's diverticulum.*—W. S., male, æt. 46, machine minder. No previous history of abdominal pain. On February 26th, 1905, patient woke up with headache and feeling of malaise. He then experienced acute pain in the abdomen around the umbilicus. Vomiting occurred 3 times. Previous to this attack bowels had been unopened for 2 days. Admitted 12 hours after onset of pain. A strong, healthy-looking, rather stout man, in severe pain, not relieved by alteration of position. A round swelling was present in right iliac fossa and abdomen, and was acutely tender in neighbourhood of umbilicus. No evidence of free fluid in abdomen. Temperature 98°; pulse 62. An enema was administered but with no result. The next day temperature had risen to 100·6°, the pulse rate was 110, and the abdomen was observed to be greatly distended, and patient was still in considerable pain. Transferred to Surgical side. Abdomen was opened, and a collection of deeply blood-stained serum was found free in the peritoneal cavity. It was somewhat offensive and it was sponged out. Some coils of small intestine were of chocolate colour and had lost their resiliency, though peritoneal coat still retained some polish. The mesentery of this portion of the gut was greatly thickened and infiltrated with blood, and no pulsation could be felt in its vessels. The cause of the strangulation was found to be a short diverticulum adherent at its free end to the mesentery. This diverticulum was amputated and the opening closed by a double row of continuous sutures; 46 inches of gangrenous ileum were resected and axial anastomosis was performed with double row of continuous silk sutures, the outer one being sero-muscular. Condition during operation very bad, therefore patient was infused. An infusion was repeated again the same evening as condition of shock persisted. Vomiting and diarrhœa were both present for the 24 hours after the operation, and the vomit was dark and thick. The stomach was washed out and 2 more pints of saline were infused intravenously. On March 1st a slight rigor occurred, but general condition of patient was good, pulse rate being 72. On March 2nd rectal feeding was commenced to overcome the vomiting, and for 3 days condition remained good. At the end of this time patient fell out of bed, but did not hurt himself, and shortly afterwards it was observed that the dressings were foul and a quantity of yellow fecal fluid escaped from the wound. This fluid caused considerable soreness of skin around wound by its digestive action, and the amount escaping was so great that on March 7th the abdomen was reopened through the original wound. A hole in the gut was found and an attempt at closure by silk suture was made. Around this opening a localised purulent peritonitis was present. The next day there was still free escape of fecal fluid, and patient complained of pain and was much exhausted. Temperature had fallen to 96·2°.

the pulse rate was 96, and weak. This state of exhaustion lasted for 36 hours, when death occurred. P.M.—Body well nourished. Upper food- and air-passages healthy. Heart hypertrophied, no valvular lesions. A general sticky peritonitis was present, and a small collection of foul-smelling pus and faecal matter lay immediately beneath the transverse colon. At this point two free ends of small intestine were found with no adhesion to each other and no sign of repair. A few inches along the lower coil, at a point 8 inches above the ileo-cæcal valve, was the closed opening of Meckel's diverticulum. This was sound. The liver was fatty and somewhat cirrhotic. Spleen slightly enlarged. Kidneys congested and cardiac. Other organs healthy.

*Volvulus of small intestine.*—Male 1; female 1. Died 1. Cæcum 1. Sigmoid 1. After sigmoido-sigmoidostomy.

*Treatment.*—Reposition of cæcum 1; resection of sigmoid loop 1. Post-operative parotitis 1.

*Volvulus of sigmoid; after sigmoido-sigmoidostomy for idiopathic dilatation of colon; resection; recovery.*—A. E. C—, female, æt. 49, dressmaker. Patient was operated on in September, 1904, for idiopathic dilatation of colon, a sigmoido-sigmoidostomy being performed; symptoms were completely relieved for 2 months, after which time they began to reappear, and on December 26th patient was readmitted with abdominal pain and distension accompanied by vomiting. Immediately coliotomy was performed and it was found that a volvulus of the sigmoid loop was present, its pedicle being just below the site of previous lateral anastomosis. The twist was from left to right through  $1\frac{1}{2}$  turns. This loop was enormously distended with gas, and contained very little faecal matter. It was resected and found to be 10 inches in length, its lumen easily admitting the closed fist. Muscular walls were greatly hypertrophied. The free ends of bowel were closed with a double row of silk sutures. Patient experienced very little pain after operation, and bowels were open with aperient on 2nd day. The bowels were open freely after this; the stools were loose, and for 4 days they contained blood and mucus. With the exception of some slight pain after food and the fact that peristalsis was readily visible through the abdominal wall in the left iliac region, the patient made an uninterrupted recovery. She was discharged at the end of the 5th week.

*Fatal case. Volvulus of cæcum; secondary parotitis.*—F. D—, male, æt. 33, bricklayer. Previous health good. Three days' history of severe abdominal pain, with absolute constipation and incessant vomiting. On admission the abdomen was distended anteriorly, prominence being most marked in the epigastric region and very slightly in the flanks. Visible peristalsis in left iliac fossa. Abdomen tender on palpation, percussion note everywhere resonant, the liver dullness being obliterated in front. Respiratory movement poor. Rectal examination negative. Temperature  $99.2^{\circ}$ . Expression anxious. Immediate coliotomy was performed, and the right iliac fossa was found to be unoccupied by cæcum. The intestines were delivered through wound, and cæcum found in left hypochondrium as large as a dilated stomach. It was found to be twisted through  $1\frac{1}{2}$  turns from right to left in longitudinal axis; the crux was situated just below hepatic flexure, the cæcum and colon being displaced below the spleen. The ileum was carried

across the attachment of the mesentery, so that 6 feet of small gut were congested and distended to such a degree as to cause rupture of peritoneal coat in several places. The cæcum was punctured and its contents evacuated. The viscera were replaced in their normal situation and the wound closed, there being considerable tension on the stitches. Owing to collapse, patient was infused during operation. General condition after operation fairly good; wound suppurated, however, and stitches had to be removed on 4th day. Right-sided parotitis on 12th day, at which time the wound was gaping widely and coils of intestine could be seen at its base. Abdominal wall strapped. Parotitis lasted 5 days, and no suppuration occurred. At the end of 3rd week a fæcal fistula developed by sloughing of portion of exposed bowel-wall. Signs of fluid were present on left side of chest in middle of 4th week, aspiration was carried out and  $\frac{1}{2}$  oz. of clear serum withdrawn. Patient during this time was becoming thinner and weaker, although appetite was good, there was not much pain, and patient slept very well. Discharge from fæcal fistula abundant. Further aspiration of chest over left lower lobe was performed a fortnight after the first aspiration, and evil-smelling pus was withdrawn in small quantity; 12 days later 10 oz. of offensive pus were removed. Temperature for 6 weeks after operation had been raised nightly, reaching usually  $101^{\circ}$  or  $102^{\circ}$ , and the repeated aspiration of chest had little effect in reducing temperature. At the end of 7th week it was, however, normal every morning, and ranged between  $98^{\circ}$  and  $101^{\circ}$  for 10 days, at the end of which time it rose suddenly to  $102.6^{\circ}$  and a rigor occurred. Fever diminished, but rigors were repeated six days later. At beginning of 10th week condition of patient had slightly improved and resection of rib was performed, giving exit to further collection of offensive pus; an attempt was also made to close the fæcal fistula by suture. This, however, remained closed for only 4 days. The bowels shortly after operation had been opened very freely, diarrhoea being present during the 1st week. After this there had been some difficulty in getting an action of the bowels, and rectum was emptied subsequently by daily enemata. Death occurred at the end of 10th week. P.M.—Profound emaciation. Fæcal fistula communicated with cæcum. Intestines in lower abdomen showed extensive matting. Some pus was present among these adhesions. Suppurative peritonitis was present all over the lower abdomen, having evidently originated in cæcal region. Upper part of peritoneum free. Abdominal organs healthy. Cavity of left-sided empyema was shut off by adhesions from remainder of pleura. Lung collapsed. Right lung and pleura healthy. Heart normal.

#### STOMACH.

*Pyloric stenosis.*—Males, 2; females, 2. Died, 2. After hydrochloric acid poisoning, 1. Chronic gastric ulcer, 3.

*Treatment.*—Finney's operation, 1; anterior gastro-jejunostomy, 3.

#### *Fatal cases.*

1. *Simple stricture of pylorus (after hydrochloric acid poisoning); anterior gastro-jejunostomy; general peritonitis.*—F. H—, male, æt. 42, general dealer. Typhoid 24 years ago. Since then long period of dyspepsia. Nine weeks before admission a gill of spirits of salts had been taken by mistake for medicine.

Admitted to hospital shortly afterwards and treated on Medical side until day of operation. During this time hæmatemesis in small amount occurred three times, a trace of mælena was observed, and frequent vomiting was present; relieved by gastric lavage daily; bowels obstinately constipated. Considerable dilatation of stomach and only slight relief of symptoms by medical treatment. Operation therefore performed nine weeks from date of corrosive poisoning. Stomach was found to be greatly enlarged, and pyloric thickening was present. On opening stomach it was found to be full of undigested fluid material, and two pints were withdrawn, the stomach being washed out with saline. Anterior gastro-jejunostomy performed. During the next 24 hours pulse rate and temperature both rose, the former reaching 112 and the latter 102°. Persistent vomiting present, the vomit containing a good deal of blood. Six-hourly rectal feeding was tried, but vomiting still recurred; temperature remained between 101° and 102°, pulse rate over 120, growing weaker; and no action of bowels was obtained. Death took place 80 hours after operation. P.M.—Body emaciated. General suppurative peritonitis of great sac. Anastomosis pervious and watertight under considerable pressure. Stomach dilated and hypertrophied. Pylorus presented a cicatricial stricture just admitting a No. 8 catheter. No indication of corrosive action elsewhere in stomach or œsophagus. Old phthisis in both upper lobes of lungs; heart normal, its right cavities containing white clot. Pericardium showed broad adhesion between visceral and parietal layer over front of left ventricle. Liver fatty; one large gall-stone present in bladder half an inch in diameter. Other organs normal.

2. *Simple stricture of pylorus; anterior gastro-jejunostomy.*—C. H.—, female, æt. 47, married. Dyspepsia and constipation for 9 years. Hæmatemesis on two occasions, 5 years and 2 years ago respectively. On each occasion about half a pint of blood was vomited. Loss of flesh for 12 months; for 7 weeks before admission almost daily vomiting, sometimes five times in the 24 hours, the vomit being evil-odoured and containing undigested food. On examination great dilatation of stomach, the lower margin being only two inches from symphysis pubis. Peristalsis visible in this area, passing from left to right. Splashing readily elicited. Hard nodular mass felt beneath right costal margin, moving freely with respiration in the situation of the pylorus. Vomit, examined on two occasions, contained no free hydrochloric action; its reaction was acid. Treated for five days on Medical side by gastric lavage. Operation performed a week later, when the stomach was found to be quite small and thickening was felt in the neighbourhood of pylorus. An anterior gastro-jejunostomy was performed, the jejunum selected being 12 inches from duodeno-jejunal flexure. No vomiting occurred till the day after operation, when patient felt fairly well; pulse rate 82, respirations 20, temperature 99°. The vomiting was repeated several times during the day and was not relieved by administration of cocaine. Gastric lavage performed the same night. The resulting fluid was dark brown, of fæculent odour, and contained blood. In spite of all efforts vomiting steadily persisted. Bowels were unopened for 4 days after operation, and then calomel, 4 grs., produced a fair result. Considerable pain across lower part of abdomen and back was complained of on 4th day. Some abdominal tenderness and distension was present, and the patient died 7 days after operation, with signs of

peritonitis. P.M.—Body emaciated. The flanks and pelvis contained dark-coloured stomach-contents, but showed no signs of inflammatory reaction. The left extremity of the gastro-enterostomy junction was gaping and patent, and the fluid had passed into pelvis along course of descending colon. The pylorus and adjacent portion of stomach were uniformly thickened, and on section the tissue was firm and white. The glands between pylorus and adherent colon were enlarged. Stomach-wall was hypertrophied and its cavity dilated. No peritonitis was found. Lungs showed old tubercle at right apex; pleural sacs normal. Heart wasted. Bowels healthy. Pathological report: Pylorus shows no sign of malignant disease. Muscular coat greatly hypertrophied; marked inflammatory infiltration of mucosa and submucosa.

*Chronic gastric ulcer.*—Males 5; females 7. Died 3. Perigastric adhesions, with perforation into lesser sac 1; vicious circle after operation 1.

*Treatment.*—Anterior gastro-jejunostomy 8; posterior 3; subsequent jejunostomy 1. Coeliotomy, lavage, and drainage for post-operative peritonitis 1.

*Fatal cases.*

1. *Chronic gastric ulcer; perigastric adhesions; dilated stomach.*—A. S—, female, æt. 30, general servant. Twelve years' history of dyspepsia with several attacks of severe abdominal pain accompanied by vomiting. No hæmatemesis. Bowels constipated. For 3 months before admission vomiting had occurred frequently. No blood in vomit; considerable loss of weight; obstinate constipation. Urine contained trace of albumen. On admission, visible peristalsis from left to right in stomach area. Abdomen rather distended, tenderness on deep palpation in region of stomach. Percussion note everywhere resonant. Coeliotomy on day after admission through left rectus. Stomach enormously distended, with transverse colon lying in front of it and dense adhesions around pylorus. Gastro-jejunostomy was performed, the jejunum being passed through aperture made in great omentum. Slight vomiting occurred after operation, but condition was good, and stitches were removed on 8th day. At this time patient began to complain of abdominal pain, and shortly afterwards vomiting reappeared, necessitating rectal feeding. This was continued for 5 days, when feeding by mouth was recommenced, but it caused considerable pain, the pain being most noticeable at night. Condition, however, improved, so the patient was allowed up in the middle of the 4th week. On examination at this time marked dilatation of stomach was still observable, and peristalsis could occasionally be seen. Abdominal pain was persistent. Twenty-seven days after admission abdomen was reopened and the stomach was found to be surrounded by very dense adhesions, in separating which a small hole was made into the stomach. This was closed with Lembert's sutures and nothing further was done, but abdominal wound closed with drainage down to site of gastric perforation. Condition after operation was fairly good, but symptoms were in no way relieved. Plug removed on 4th day, and on its withdrawal a large amount of clear fluid escaped with gastric odour accompanied by old blood-clot. A tube was used to replace the gauze plug. Patient survived this second operation for 13 days, but became progressively weaker and suffered from persistent fever. P.M.—Profound emaciation. Wound above umbilicus found to lead into stomach, around which were dense adhesions to parietal peritoneum and adjacent viscera. On the pos-

terior wall of stomach, midway between cardia and pylorus, was an ulcer some 2 inches in diameter, with serpiginous outline and thickened margin. This had perforated completely, and its base was formed by the pancreas, and from the edges of this ulcer cicatricial bands passed almost completely round the stomach, compressing it so as to produce an hour-glass shape. The gastro-jejunostomy had been performed with the pyloric pouch, and into this also the fistula opened.

Lower part of abdomen free from adhesions, and no acute peritonitis. Liver and spleen showed inflammation of their capsules; the other organs were normal, with the exception of pleural adhesions.

2. *Chronic gastric ulcer; post-operative; peritonitis.*—F. W—, female, æt. 21, waitress. Twelve months' history of dyspepsia, with frequent vomiting of small amount with hæmatemesis on several occasions. On admission patient appeared healthy. Palpation revealed tenderness in epigastrium on firm pressure; no tumour could be felt. Combined percussion and auscultation revealed greater curvature of stomach below level of umbilicus, and splashing could be elicited. Treated for 15 days by careful dieting, with relief of symptoms so long as patient remained in bed. The pain, however, recurred after patient was allowed to walk about, and operation was decided upon. Antero-gastro-jejunostomy was performed on 15th day, and at operation an irregular area of scar-tissue was felt through anterior stomach wall. The stomach was freed from adhesions. Very shortly after operation the temperature, which had previously been normal, was 100°, and the following day it rose to 102·8°, the pulse rate increasing from 80 to 116 and respirations from 20 to 36. There was considerable abdominal pain. Throughout the next day this condition persisted, and patient vomited. The abdomen was distended and tender. Bowels had not been opened, and further celiotomy was performed on 4th day after operation. The anastomosis was found to be intact, but the abdominal cavity contained abundant free pus. Lavage was performed and the wound drained. Temperature became subnormal and slight improvement resulted, but the following day temperature again rose to 102° and vomiting recurred, the abdomen became rigid and Hippocratic facies well marked, death occurring on 6th day after anastomosis. Bacteriological report: Culture from peritoneal fluid yielded growth of *Streptococcus pyogenes* and *Staphylococcus aureus* and *albus*. P.M. —General suppurative peritonitis. Abundant purulent exudate. Anastomosis was water-tight; a large chronic ulcer was present on posterior wall of stomach near the cardiac end. Some adhesions were present between the stomach wall in this situation and the pancreas. Mucous lining of intestinal tract was healthy. Pelvic organs normal. Lungs showed intense congestion of both lower lobes.

3. *Hour-glass stomach after suture of chronic gastric ulcer.*—A. M—, female, æt. 46, housekeeper. First admission on August 9th, 1904. History of dyspepsia for 12 years. Marked loss of weight with frequent vomiting for 3 years. Tenderness in epigastrium; a tumour noticed by patient beneath left rectus. The stomach was dilated and prominent, exhibiting peristalsis from left to right. Celiotomy on August 18th, 1904. Anterior surface of stomach firmly adherent to left lobe of liver. These adhesions were broken down and a hole was revealed in anterior wall of stomach and closed by Lambert's sutures. Condition remained good until March, 1905, when patient began to have attacks of pain on left side

of abdomen accompanied by vomiting. The vomiting relieved the pain, which was usually noticed to commence 1 hour after food. For 3 weeks before readmission on August 12th, 1905, pain was almost continuous and was very severe. Some abdominal distension was observed during attacks of pain, and bowels were obstinately constipated. On admission, scar of former operation over left rectus, in which region the abdomen was very tender, and became rigid when deep palpation was attempted. The stomach was dilated, and splashing could be elicited. No peristalsis was observed. On August 16th the abdomen was reopened through old scar. The stomach was surrounded by adhesions, some of which fixed it to the under-surface of liver. An opening was made through transverse meso-colon below stomach, and through this aperture, close to greater curvature of stomach, a gastro-jejunostomy was performed. This method was adopted owing to the fixity of stomach. Vomiting occurred shortly after operation and persisted for 3 days in spite of gastric lavage, becoming almost continuous. For the relief of this vicious circle vomiting a jejunio-jejunostomy was performed 3 days after first operation. The vomiting was greatly relieved by this second operation, and condition of patient remained good for 2 days, but at the end of that time temperature rose to  $100.4^{\circ}$ , pulse rate to 124, and bowels were only open once, death occurring 3 days after the second anastomosis. P.M.—Body emaciated, abdomen distended. When peritoneal cavity was opened a considerable quantity of odourless gas escaped, and slight peritonitis was seen below the stomach on left side. Small intestine was collapsed, and the transverse colon was not visible owing to the fact that the small intestine had passed through the opening in the transverse meso-colon. The coils were not strangulated, and reduction was easy. A sharp kink was present in the jejunum beyond the point where the gastro-jejunostomy had been performed. All anastomoses were sound. Water passed readily from the stomach into the proximal limb of jejunum, and thence through the second anastomosis into small intestine. It was, however, impossible to drive water from the stomach through the first anastomosis down distal limb of jejunum; the obstruction was at the kink mentioned above. The constricted portion of stomach was firmly bound to under surface of left lobe of liver. In these adhesions was a small aperture accounting for the presence of free gas in the peritoneum. Old pleural adhesions near apex of right lung with a puckered cicatrix beneath it. Other viscera healthy.

*Perforated gastric ulcer.*—Males 2; females 8. Died 3. Phthisis 1; death from hæmatemesis 1. (See 2 other cases in "Medical Report.")

*Treatment.*—Suture and cleansing of peritoneum in all. Subsequent anterior gastro-jejunostomy during convalescence 1.

*Fatal cases.*

1. *Perforated gastric ulcer.*—G. W—, male, æt. 20, labourer. History of dyspepsia without vomiting for one month. No previous attacks of acute pain. Twenty hours before admission, sudden onset of acute pain, referred to right iliac fossa. Nausea; vomiting induced by tickling fauces. On admission abdomen was rigid, distended, and motionless. Dulness in both flanks; liver dulness obliterated. Pulse very rapid and feeble. Temperature  $98.6^{\circ}$ . Cœliotomy 2 hours after admission by displacement of right rectus below umbilicus. Free gas and purulent fluid escaped on opening the peritoneal cavity; appendix



healthy. Stomach contents also found free in abdominal cavity. Second incision made through left rectus. Perforation of ulcer discovered 1 inch to left of pylorus and near the lesser curvature of stomach. Closed by double layer of interrupted sutures. Free irrigation of intestines with normal saline. Drainage by tubes; one placed down to site of ulcer, the other down to pelvis. Intravenous infusion during operation. Pulse 130, and weak after operation. Death occurred a few hours later. P.M.—Perforation of chronic ulcer found on anterior surface of stomach close to pylorus and lesser curvature. Sutured, but leaking. Old adhesions found between site of ulcer and under surface of liver. Similar ulcer found on posterior stomach wall; not perforated. Acute general peritonitis present with fibrous purulent exudate. Lungs congested. Liver showed cloudy swelling. Other organs healthy.

2. *Perforated gastric ulcer; phthisis.*—J. N—, female, æt. 24, laundress. Past history of constipation, with dyspnoea on exertion, hyperacidity, and general feeling of languor. No history of previous vomiting, fainting, or hæmatemesis. Slight hæmoptysis on two occasions. Pain in abdomen of vague character for fourteen days before admission. Perforation 27 hours before operation, with very acute abdominal pain radiating all over the body. On the day before admission there was vomiting of black-coloured material. Admitted on December 25th, 1905. On admission patient was in great pain and somewhat collapsed. The whole abdomen was rigid and especially so on the left side. There was shifting dulness in the flanks and well-marked tenderness on pressure, most marked beneath left rectus. Movement on respiration was impaired though not entirely absent. Temperature  $101^{\circ}$ , pulse 104. Immediate celiotomy to left of middle line. White turbid fluid escaped from peritoneal cavity, the stomach was found, and a perforated ulcer seemed to be present on its anterior wall close to the cardiac end. The base of the perforation was large and indurated. The ulcer was excised and the stomach closed by two layers of sutures, the first through mucous membrane and the second through serous and muscular coats. Irrigation of peritoneum was carried out and the abdominal wound was closed. After operation temperature remained high, being  $102^{\circ}$  at the end of twelve hours. Pulse rate 104, respirations 36. Patient very restless. Action of bowels was obtained on 3rd day by administration of enema, but patient was greatly troubled by cough. Sputum muco-purulent and abundant, no blood. During the next three days temperature remained between  $102^{\circ}$  and  $105^{\circ}$ , pulse rate rose to 130, and respirations were 44; considerable pain over left side of chest. Patient took fluids fairly well and bowels were open, but temperature did not fall, and death occurred when it was  $105^{\circ}$ , on December 31st. P.M.—The upper parts of pleural sacs closed by dense adhesions. The whole of left lung was solid. At the apex was a large cavity 2 inches in diameter lined by inflammatory tissue. Several smaller cavities and caseous masses with increase of fibrous tissue were present throughout the upper lobe. Lower lobe was broncho-pneumonic and showed tubercles of recent origin. Right lung fibroid and caseous in its upper lobe. Bronchial glands calcified. Peritoneum sticky, but not acutely inflamed. Stomach when distended with water assumed an hour-glass outline, the constriction being slightly nearer the cardia than pylorus and corresponding with the line of suture of the excised ulcer. A small ulcer was present on the posterior wall exactly

opposite the one which had been excised. The floor of this was formed by peritoneum. Liver fatty. The other organs showed slight swelling; the line of suture in stomach wall withstood considerable water-pressure.

3. *Perforated gastric ulcer; hæmatemesis.*—E. E. C—, female, æt. 20, single. Treated as out-patient for six months for gastric ulcer, evidenced by pain after food and occasional hæmatemesis. Two days before admission, after eating a sausage, patient was attacked with pain in stomach, and the following morning she had violent epigastric pain and vomited. Admitted to hospital 24 hours later. On admission abdomen slightly distended. Respiratory movement poor. Abdominal wall rigid. Liver dulness absent. Tongue dry and slightly furred. Pulse 120, temperature 100°. Immediate celiotomy revealed a perforation on anterior surface of stomach near lesser curvature at cardiac end. The perforation was as large as a shilling and was closed with sutures and covered with an omental graft. A sub-umbilical incision was also made and the abdominal cavity washed out. No drainage. Temperature after operation became 98·2°, pulse 108. No action of the bowels was obtained, except a slight result from a turpentine enema. Patient vomited on several occasions and brought up a quantity of blood, some of which was bright red. Temperature rose at the end of 12 hours to 101·4°, pulse rate 146, respirations 42. This condition persisted for 48 hours, when the pulse became more rapid and the temperature fell to 99·4, death occurring on morning of 4th day. P.M.—Peritoneum contained a little free fluid, but no blood. This had collected principally in left renal fossa, though a little was still present on right side and in pelvis. Slight peritonitis in lower segments, extending on right side to diaphragmatic surface of liver; lesser sac full of purulent matter. The perforated ulcer was situated half-way along lesser curve of stomach along the line of attachment of gastro-hepatic omentum. The stomach was of hour-glass shape. Suturing sound, though no attempt at healing had occurred. The perforation had occurred through floor of callous ulcer, and on posterior surface was a twin recent ulcer, presumably the source of hæmatemesis. No blood remained in stomach or œsophagus. Small hæmorrhages were seen in mucosa. The stomach was not empty. Liver fatty. Left pleura showed dense adhesions; fibroid phthisis in left upper lobe; rest of lungs healthy. Other organs normal.

*Chronic duodenal ulcer.*—Male 1; female 1.

*Treatment.*—Anterior gastro-jejunostomy 1; posterior 1.

*Perforated duodenal ulcer.*—Males 2; died 2. Well-marked peritonitis present at operation in 1 case.

*Treatment.*—Suture, with cleansing of peritoneum in both cases.

#### *Fatal cases.*

1. *Perforated duodenal ulcer; general peritonitis.*—T. G—, male, æt. 47, papermaker. No history of serious previous illness, alcoholic habits, or dyspepsia. Seven days before admission patient first noticed slight discomfort after food. Forty-eight hours before admission sudden attack of epigastric pain of very severe character. Vomiting occurred at onset of pain and was repeated frequently. On admission aspect of patient bad. Temperature 100°.

pulse rate 136. Abdomen greatly distended and quite motionless. Percussion note was tympanitic over most of abdomen, and anterior liver dulness was absent. Shifting dulness was present in the flanks. No peristalsis could be seen or heard. Immediate celiotomy revealed a large amount of fluid in abdominal cavity, having the usual character of intestinal contents. This fluid was removed with sponges and duodenum exposed and found to be perforated in its first part along inner border. Lymph was present on all coils of intestine exposed, and fluid was abundantly present in the pelvis. Peritoneal cavity was dried with sponges and the incision closed. Shortly after operation temperature was 101°, pulse rate 152, respirations 30. Death occurred within 6 hours. P.M.—General peritonitis, the intestines everywhere congested, adherent, and enclosing foul-smelling purulent fluid in pockets between the adhesions. Large quantities of fluid present in pelvis and renal fossæ. Stomach healthy. Suturing of perforated ulcer on anterior aspect of first part of duodenum was sound. On posterior aspect, exactly opposite the site of perforation, was a second ulcer, rounded in outline, and about  $\frac{1}{2}$  inch in diameter. It showed no perforation, but its base was thin and formed by adhesions to pancreas. Other organs showed cloudy swelling.

2. *Perforated duodenal ulcer; broncho-pneumonia.*—E. B—, male, wt. 46, farrier. History of alcoholic habits many years previously. Teetotaler for several years, return to excessive drinking of alcohol 12 months before admission. Soon after this patient was troubled with dyspepsia, with severe pain and discomfort after food, and vomiting, with altered blood in the vomit. The motions were also observed to be "tarry." Several attacks of this nature in 12 months. Forty-eight hours before operation, which was performed very shortly after admission, patient was seized suddenly with violent abdominal pain. A saline purgative was taken and the bowels were opened. No vomiting occurred, but the abdomen was observed to become distended, tender, and painful. On admission patient was in severe pain, the abdomen was distended and somewhat rigid. There was marked tenderness on palpation, chiefly above the umbilicus. Percussion note was dull in the flanks, and this dulness shifted with alteration of position. Liver dulness absent in anterior axillary line. Immediate celiotomy through mid-line revealed a large amount of fluid in peritoneal cavity consisting of purulent matter and intestinal contents. A perforation was found in the second part of duodenum, and this was sutured. Further incision was made below the umbilicus and the abdomen was irrigated, both wounds being drained. Condition of patient remained good for 3 days, pulse rate being only 84, though temperature was about 100°. There was then an increase in rate of respirations to 40 per minute, and patient was greatly troubled with cough and was extremely restless. A diagnosis of confluent broncho-pneumonia at both bases was made, consolidation on left side extending up as far as angle of scapula. Condition gradually became more severe, there was a good deal of pain in chest; temperature rose to 102.4° on 5th day; pulse rate 124, respirations 50. There was slight improvement the next morning, but pulse failed that evening, and death occurred 5 days after operation. P.M.—Perforation present on anterior wall of duodenum,  $\frac{1}{2}$  inch beyond pylorus, through the floor of chronic ulcer. There had been no attempt at healing, and the wound was not watertight. A

symmetrically placed second ulcer, whose floor was composed of adhesions of pancreas, was present on posterior duodenal wall. The stomach exhibited a very large, circular, chronic ulcer,  $1\frac{1}{2}$  inch in diameter, and situated on the lesser curvature; its floor was formed by gastro-hepatic omentum. No peritonitis and no free fluid were present in peritoneum, with the exception of 1 drm. of pus in neighbourhood of sutured ulcer. Lungs both exhibited intense disseminated broncho-pneumonia, confluent in parts, producing large areas of consolidation. Bronchial tubes, large and small, were full of muco-pus. Adhesions at right base. Heart showed right-sided dilatation and relative incompetence of tricuspid valve. No endocarditis.

*Gastroptosis*.—Male 1. Phthisis.

*Treatment*.—Posterior gastro-jejunostomy.

*Perigastric adhesions*.—Male, 1; female, 1.

*Treatment*.—Gastrolisis in both cases.

### BILIARY PASSAGES.

*Cholelithiasis*.—Males, 3; females, 26. Died, 3. Empyema of gall-bladder, 2; hydrops, 3; gangrenous cholecystitis, 1; impacted stone in common duct, 3; in cystic duct, 3. Admitted for biliary fistula, 6.

*Treatment*.—Cholecystostomy 16, with cysto-choledochotomy in 1 case; cholecystotomy 2, with communo-choledochotomy in 1 case; cholecystectomy, partial 2, complete 2; communo-choledochotomy, 1; cysto-choledochotomy, 1; cholecystenterostomy, 1; excision of fistulous track, 1; incision of fistula, 1; removal of calculus from neck of fistula, 1; appendicectomy, 1. Second cœliotomy and drainage for spreading peritonitis, 1.

#### *Fatal cases.*

1. *Cholelithiasis; gangrenous cholecystitis*.—E. S—, female, æt. 32, married. Indigestion for 9 years. Attack of biliary colic 4 years ago. Two weeks before admission patient was taken rather suddenly ill with severe pain on right side of epigastrium; frequent vomiting and headache. Pain radiating from right hypochondrium down right flank to inner side of right thigh. Vomiting bilious. On admission respiratory movement of abdominal wall fairly good. Inspection negative. On palpation a rather hard, cystic tumour was present in the neighbourhood of the gall-bladder. Liver dulness began at fifth space in nipple line and extended 1 inch beyond the costal margin, where the edge could be felt. Tenderness was present over the cystic tumour. Urine contained a large amount of albumen, and bile was present. Operation on day after admission to Medical ward, abdomen being opened through right rectus. Gall-bladder was tense and hard, and fixed by adhesions to the hepatic flexure of colon. The peritoneal cavity was packed off with gauze, the adhesions divided, and the gall-bladder opened. A good deal of pus was evacuated, and a large number of cholesterinous stones were removed from the gall-bladder. In separating these adhesions an opening was found into the colon; this was closed by a double layer of Lembert's sutures and an omental graft. A large stone was removed from the neck of the gall-bladder. The wound was sponged with hot saline and drained, a rubber

tube being tied into the gall-bladder. A doubtful portion of gall-bladder wall surrounded by adhesions to duodenum was further secured to this structure with silk sutures. Condition after operation was good, temperature being subnormal and pulse 88. The dressing on the 3rd day was very offensive, but general condition was good, though bowels had only been opened by enema. Bile was discharged from the wound outside the cholecystostomy tube. On 6th day temperature suddenly rose to 104°, and a rigor occurred at mid-day and was repeated 12 hours later. At this time the bowels had been well opened, and pulse was about 100. Rigors were repeated on the two subsequent days, and the jaundice which had been present from the first was increased. A second operation was undertaken on 9th day, the wound being enlarged. Another stone was removed from the gall-bladder, and a probe was passed for some distance along the common duct. Bile flowed freely from the opening of the fundus of gall-bladder. Wound was washed over with saline and further drainage was effected by tubes, one of which passed into right renal fossa. Temperature fell to normal within 12 hours, but rose again the following morning to 102° and frequent vomiting took place. Gastric lavage relieved the vomiting, and rectal feeding was adopted. Temporary improvement resulted but temperature remained high, and the pulse became over 130 per minute and feeble, death occurring on 14th day. Pathological report: Films of fluid from gall-bladder showed large numbers of Gram-positive and Gram-negative cocci. Aerobic cultures yielded pure growths of *Staphylococcus albus*. P.M.—Peritoneal cavity full of pus, which, however, did not encroach on the upper surface of liver. Lesser sac also involved. A gall-stone,  $\frac{1}{2}$  inch in diameter, was present just above the biliary papilla, obstructing common duct but not the pancreatic duct, which opened below its site. Common bile-duct greatly dilated, containing a second stone just below its junction with the cystic gut. Gall-bladder thickened and adherent to hepatic colon. Portal vein just below transverse fissure showed marked inflammatory changes, and contained purulent material extending into the substance of the liver. The distal portion of portal vein and its tributaries were quite healthy. Liver jaundiced and fatty. Pancreas healthy, spleen large and soft. Pleural sacs were dry and a number of sub-pleural ecchymoses were present, scattered over surface of lungs, which were partially collapsed at the bases and oedematous elsewhere. Other organs healthy.

2. *Cholelithiasis; empyema of gall-bladder.*—M. K.—, female, æt. 50, married. Past history: rheumatic fever at age of 15, causing some heart weakness ever since. Seven children, the last stillborn, the others healthy. Present illness dates back four years, during which period attacks of pain in the abdomen and right lumbar region have been common. Attacks have gradual onset and last about 30 hours, unaccompanied by vomiting. More recently patient has been subject to attacks of biliary colic, with vomiting and sometimes slight jaundice; these attacks always preceded by marked constipation. Some pain and difficulty on micturition observed on occasions. On admission liver was found to be enlarged, its edge being felt  $1\frac{1}{2}$  inches below the costal margin. No definite enlargement of gall-bladder felt, and no gall-stone crepitus elicited. Right kidney freely movable. Abdomen opened over the gall-bladder on 9th day. The liver was found to be considerably enlarged, and a thin layer of liver-

substance covered a greatly distended gall-bladder. The abdomen was packed off with gauze and the gall-bladder was opened after being first punctured with trocar and cannula; 4 oz. of purulent fluid were withdrawn, and a large faceted stone,  $\frac{1}{2}$  inch in diameter, was removed. Other small stones were removed from gall-bladder, and a further isolated stone was removed by incision through the wall of cystic duct. Operation completed by drainage of gall-bladder with tube and surrounding wound with gauze plug. The next day, 18 hours after operation, temperature rose to  $102^{\circ}$ , and the pulse to 112; the patient was in considerable pain; vomiting also took place. The day following there were evident signs of spreading peritonitis, the abdomen around the wound was distended and tender, and the percussion note in right flank was dull. Further incision was made, and the peritoneal cavity was found to contain purulent fluid. This was removed by sponging, and a large drainage-tube was put in. Condition was temporarily relieved and pain diminished, but pulse rate the next day was 134 and temperature rose nearly to  $108^{\circ}$ . Enemata were given without result, and 4 days after the first operation death occurred with temperature of  $102^{\circ}$ , though 12 hours before it had dropped to normal. P.M.—Slight localised peritonitis in neighbourhood of gall-bladder with flanks of fibrinous lymph. No general peritonitis, lesser sac healthy. Walls of gall-bladder thickened. No further calculi present in bile-ducts. Liver fatty and very soft. Stomach markedly dilated; no pyloric obstruction present, mucous membrane healthy. Lungs congested and oedematous, especially on right side. Old adhesions in right pleural cavity. Heart showed a few patches of thickened endocardium on mitral valve; all valves competent.

3. *Cholelithiasis; cholecystitis; suppurative phlebitis.*—A. J.—, female, æt. 67, married. For some time before admission patient had been subject to occasional bilious attacks. Present illness began with sudden acute pain below right costal margin, lasting for three days, during which patient lay curled up in bed sweating profusely. Constipation was present during this attack. This occurred nine weeks before admission, and patient remained in bed during this period, suffering from intermittent pain in the neighbourhood of the liver. No jaundice observed; three calculi the size of a walnut passed *per rectum*. On admission icteric complexion; liver dulness extending a hand's breadth below right costal margin; marked tenderness on palpation below tenth costal cartilage, where a tongue-shaped tumour was felt extending towards the umbilicus, apparently connected with the liver, and moving downwards with respiration. Cœliotomy revealed an enlarged gall-bladder, from which three large calculi, nearly 1 inch in diameter, together with several small ones, were removed. Ducts appeared to be patent, and cholecystostomy was performed. Discharge of bile free. Occasional rises of temperature after operation. No bile present in urine five days after operation. Intermittent fever was present throughout convalescence, which was interrupted by a rigor on the 18th day, when thrombosis of the right femoral vein was found to be present. Discharge of bile continued to be free, and general condition of patient, with the exception of the fever, remained good until the end of 5th week, when the pulse began to fail, and death occurred on 36th day. Examination of blood on 25th day showed 22,000 leucocytes per c.mm., containing 85.6 per cent. polymorphonuclear neutro-

philes. P.M.—Intestines healthy, no peritonitis present. Gall-bladder was contracted, but the bile-ducts were dilated, the mucous membrane of both common and hepatic ducts being swollen and congested. They were, however, quite patent. Abdominal aorta and iliac arteries showed extensive atheroma in their whole length. The inferior vena cava was thrombosed from the level of the renal veins to the opening of hepatic veins, and below the level of the renal vessels there were clots of a purulent character extending on the right side into external iliac and femoral veins, while on the left side it extended throughout internal iliac vein, which was practically an abscess cavity. Breaking-down clot was also present in superior mesenteric vein. Liver soft and fatty; no evidence of portal pyemia. Larger bile-passages dilated and inner coats congested. Other abdominal organs healthy. Pleuræ showed old adhesions on both sides. Lungs: Old tubercle at apices of both upper and lower right lobes. Mediastinal gland showed calcification. Heart-muscle flabby; aorta showed slight atheroma, which was also present on aortic flap of mitral valve.

*Pericholecystitis*.—Males 2.

*Treatment*.—Cholecystostomy 1; division of adhesions 1.

#### DIGESTIVE SYSTEM; VARIOUS.

*Intra-peritoneal abscess, due to perforated ulcer of intestine*.—Male 1, died. Nature of ulcers not ascertained.

*Treatment*.—Drainage of abscess.

*Intra-peritoneal abscess; perforated ulcer of intestine*.—W. C., male, æt. 57, clothier's porter. Past history good. Three weeks before admission severe pain in lower abdomen, with diarrhœa. Patient went to bed and remained there until day of admission. Nausea present, but no vomiting. Appetite fairly good. No increased fulness of abdomen observed. Diarrhœa gradually gave place to constipation, which was relieved by enemata, though the administration of them was extremely painful, and the motions were observed to be very black. On admission abdomen slightly distended, skin smooth and red on the right side, with injected venules, some fulness in epigastrium, rectus muscles rigid, more especially on the right side. Fluid thrill obtained through abdominal wall. Percussion note dull in right flank, the area of dulness extending inwards to outer edge of rectus muscle and to a line 2 inches above Poupart's ligament. Area of dulness not carried across mid-line; no shifting dulness present. Rectal examination negative. Systolic murmur heard at apex of heart. Urine acid, containing a small amount of albumen. Abdomen opened over the prominent area and a large amount of fœtid pus evacuated. Source of abscess not discovered; cavity drained through cœliotomy wound and counter incision in right loin. The next day patient's condition fairly good, discharge abundant, but 48 hours after operation diarrhœa set in and pulse rate rose from 80 to 100. Diarrhœa relieved by bismuth and opium. Temperature on 4th day 101°, rising on the 6th day to 102·6°, pulse rate being then 134, the volume steadily decreasing. Respirations became rapid and shallow, and the next day patient rather suddenly became pulseless and died. P.M.—Body emaciated. Large abscess

cavity had been efficiently drained. A few flakes of lymph were present on parietal peritoneum in left iliac region. Intestines adherent but not markedly inflamed. This condition was most marked in pelvis, which contained a large amount of the small intestine. Some pus was present in small collections between these coils. Appendix quite healthy. The peritonitis had extended up ascending colon, causing some collection of fluid in right renal fossa and also sub-hepatic and sub-diaphragmatic regions. Lesser sac clean. A round worm was found in abscess cavity in connection with descending colon. The stomach wall contained a few hæmorrhages, but was healthy. The duodenum showed an old ulcer on its posterior wall 1 inch beyond pylorus. Small intestine showed one round, recently-perforated ulcer, with no thickening of its edges or tissue around, on ante-mesenteric border; in its neighbourhood was a small subserous nodule. Cæcum contained one commencing ulcer 2 inches from the valve. The descending colon presented two ulcers similar to that described in connection with small bowel, and one of these had perforated. Rest of intestinal tract healthy. Kidneys showed chronic interstitial nephritis. Old pleural adhesions at both apices of left base. Obsolete phthisis in both upper lobes and at apex of right lower lobe. Bronchial glands calcified. The nature of these intestinal ulcers could not be determined.

*Tuberculous peritonitis*.—Males 2. Fæcal fistula 1.

*Treatment*.—Exploratory cœliotomy 1; nil 1.

*Encysted peritonitis*.—Female 1. Not tuberculous.

*Treatment*.—Cœliotomy and closure of abdomen.

*Acute general peritonitis*.—Males 3. Died 2. Uncertain origin 1. Due to perforated stercoral ulcer 1.

*Treatment*.—Cœliotomy and drainage all. Ileostomy 1.

#### *Fatal cases.*

1. *Acute general peritonitis; cause unknown*.—J. P—, male, æt. 55, blacksmith. Past history: Measles and scarlet fever in childhood. Gonorrhœa 30 years ago and syphilis 5 years ago. Patient admitted to having been a heavy drinker and had suffered from habitual constipation. Admitted with five days' history of abdominal pain, which began suddenly after drinking 3 pints of cyder. Treated by doctor and given castor oil. This latter caused vomiting. Bowels not open. Tongue became furred, and there was complete loss of appetite, though no further vomiting took place. Abdominal pain persisted and increased in severity. Enema administered on admission to Medical Ward produced fair result. State: Pale man with abdominal distension, but no signs of free fluid. Abdominal movements impaired, no tumour felt, tenderness present in left iliac fossa. Rectal examination negative. Urine normal. Temperature 96°, respirations 20, pulse 98. Patient vomited twice after admission, and next day was transferred to Surgical side, the abdomen being opened by a median sub-umbilical incision. Coils of intestine were found distended, red, and inflamed. Numerous large masses of lymph were adherent to its surface. Adhesions were present around iliac colon, and in pulling up this loop two rents were made in bowel wall, and these were closed. The appendix appeared to be only involved on its outer surface and it was left *in situ*. The peritonitis was general, but more marked in



pelvis, and here the lymph was most abundant. No perforation of stomach or duodenum was detected. Peritoneal cavity was washed out with saline and partially closed, the pelvis being drained with a glass tube. Patient survived the operation only a few hours. P.M.—Both lungs highly œdematous. Acute general peritonitis, with numerous fibrinous adhesions. Small collections of pus in both iliac fossæ. Appendix doubled on itself, the tip being intensely congested; no constriction present, mucous membrane healthy. No perforation found in coils of intestine, which were extremely soft and tore readily. In examining interior no ulceration was observed. Gall-bladder healthy; no cause for peritonitis discoverable. Other organs normal.

2. *Chronic peritonitis; perforated stercoral ulcer of small intestine; acute general peritonitis.*—R. G—, male, æt. 58, bookbinder. Multiple abscesses in various parts of body at age of 20. Abdominal pain present for several months before admission. No marked constipation and no vomiting. Reducible inguinal hernia on right side for many years. Absolute constipation for three days before admission; sudden onset of abdominal pain referred to region of hernia two days before admission. This pain persisted with varying degree, accompanied by the vomiting of small quantities of gastric contents at frequent intervals. On examination abdomen distended, respiratory movements present only in lower half, no visible peristalsis, and no marked area of tenderness. Percussion note resonant everywhere except in right flank, where it was slightly impaired. Liver dullness normal. Right inguinal hernia readily reducible. Pulse 140 and weak; extremities cold, tongue dry and furred. Immediate cœliotomy was performed, after the hernial sac had been opened and found to contain omentum, which was not strangulated but covered with lymph. Some purulent fluid was also present in sac. The small intestine was coated with lymph and the coils were matted together, and as these were separated fecal matter escaped into the abdomen. A further examination revealed a perforated ulcer in small intestine, with hard edge, three quarters of an inch in diameter. A Paul's tube was tied into this opening and the peritoneal cavity cleansed with saline and the wound drained. Intravenous infusion with 3 pints of saline and 15 minims of 1 in 1000 adrenalin solution was carried out, but pulse remained at 116 and temperature did not rise above 98.2°, death occurring within 12 hours of operation. P.M.—Emaciation. Intestines matted together in all directions by firm adhesions. Liver closely adherent to under surface of diaphragm. Dense adhesions present round spleen. The perforated stercoral ulcer was situated 18 inches from cæcum. The acute peritonitis was present in lower segments of abdomen and lesser sac, the upper segment being sealed off by these dense adhesions. The hernial sac had apparently contained the appendix and omentum, the former being large but otherwise normal. No lesions of the mucous tract were discovered, except several stercoral ulcers in small gut. Pleural sacs showed dense adhesions, most marked on right side. Scars of old phthisis at both apices and one calcified mediastinal gland. Lungs congested; other organs normal. Pathological report: No evidence of tuberculosis in intestine.

*Ulcerative colitis with artificial anus.*—Male, 1; female, 1. Died, 2. Previous ileostomy, 1; right colostomy, 1.

*Treatment*.—Ileo-sigmoidostomy in both cases, with closure of artificial anus. Peritonitis in both cases.

1. *Ulcerative colitis; ileostomy opening; anastomosis; closure of ileum*.—W. F.—, male, *æt.* 35, farmer. Ileostomy had been performed for severe ulcerative colitis 7 months before admission, and as a result of this patient's condition had greatly improved, and he had put on weight, though there was still some despondency of disposition. On admission the ileostomy opening was working well, but the skin around it was inflamed and sore. This was got into better condition, and operation was performed in the middle of the 4th week. The artificial anus was excised, the distal end of ileum being closed by a double row of Lembert's sutures, while the proximal end was anastomosed to the pelvic colon by lateral implantation. Condition on day after operation was bad, temperature 102°, pulse 144, respirations 36. Intravenous infusion was carried out, and was followed shortly afterwards by a rigor, the temperature reaching 103°. The wound was found to be discharging yellow, faecal-odoured fluid. Slight improvement occurred after infusion, temperature falling to normal, but with this there was abdominal pain, distension, and frequent vomiting. Bowels were unopened except shortly before death, which occurred 6 days after operation. P.M.—Intense general peritonitis with extravasation of intestinal contents in renal fossæ and pelvis. Pelvic colon lying in mid-line, site of implantation of ileum leaking. Small bowel greatly distended, mucous surface healthy. Large intestine collapsed, its walls being unduly thick and muscular coat contracted. Mucous membrane appeared quite normal. No ulceration and no evidence of scarring or undue amount of mucus was observed. Distal end of ileum successfully closed. Very little attempt at healing of anastomosis. Lungs extremely emphysematous, old adhesions in left pleura. Other organs healthy.

2. *Ulcerative colitis; right iliac colostomy; closure of artificial anus*.—S. J.—, female, *æt.* 38, married. Nine months before admission colostomy was performed on right side for severe ulcerative colitis. Irrigation of large bowel with boracic lotion had been performed daily, and though patient had had no diarrhœa or pain since the operation, a good deal of discharge *per anum* had been noticed, and patient had not gained but rather lost in weight during this 9 months. On the 6th day the artificial anus was closed by suture, and lateral anastomosis between ileum and pelvic colon was performed through a separate incision to left of middle line, the ileum having been first divided through primary wound which encircled artificial anus; the abdomen was closed with gauze drain in primary incision. Twenty-four hours after operation temperature was 102.6°, pulse-rate 130. Vomiting occurred on 3rd day after operation, though bowels were open. Abdomen rather distended and tender. Vomiting continued for 2 days. Abscess of wound for closure of artificial anus opened on 6th day, some increasing abdominal pain, with diarrhœa. Temperature above normal; pulse progressively weaker; death on 7th day after operation. P.M.—Body very wasted. General peritonitis with extravasation of faecal matter in peritoneum. Lesser sac clean. Bowel wall rotten, no attempt at union where ileum and pelvic colon had been anastomosed. The free ends of ileum were sound. The whole length of large bowel from cæcum to half an inch beyond the site of anastomosis was ulcerated, and in many places large areas of mucous

membranes had sloughed away, a good deal of hæmorrhage being present in the remainder.

*Volvulus of omentum.*—Male, 1. Diagnosed as appendicitis.

*Treatment.*—Ligature and ablation of twisted omentum. Specimen sent to the Museum.

*Primary volvulus of omentum.*—J. H.—, male, æt. 49, journeyman hatter. No history of previous attacks of abdominal pain or of hernia. Two days before admission patient experienced a dull pain in the outer and lower part of right iliac fossa. He went to work the next day, but the pain increased in severity and patient was compelled to rest. No vomiting occurred, but the pain altered slightly in position towards direction of umbilicus. Bowels were open freely. Temperature 100°; pulse 72; respirations 20. There were no other symptoms, and the only definite physical sign was tenderness on palpation in right iliac fossa, where some resistance was encountered. The case was thought to be one of acute appendicitis and cœliotomy was therefore performed. The right rectus was displaced inwards, and the posterior layer of rectus sheath was divided horizontally. On opening the abdomen a large portion of omentum was found to be congested owing to torsion of its pedicle and thrombosis of its vessels; this was the right free portion of great omentum, and it exhibited 1½ turns from right to left. This twisted omentum was ablated. The appendix was examined and found to be normal. No trace of a hernial sac could be discovered, and no cause could be found for the torsion which had taken place in the omentum. Patient made a rapid recovery and experienced no pain after operation.

*Subphrenic abscess.*—Male 1. For other cases see "Medical Report."

*Treatment.*—Abdominal incision and drainage.

*Perforated peptic ulcer of jejunum.*—Female 1. After anterior gastro-jejunostomy for pyloric stenosis following suture of perforated gastric ulcer.

*Treatment.*—Cœliotomy, suture, lavage of peritoneum, no drainage. See report, under "Acute Abdomen," in 'Lancet,' February 5th, 1906.

*Pericæcal adhesions.*—Males 2. Died. After appendicectomy 1; simulating tumour of cæcum 1.

*Treatment.*—Cœliotomy and division of adhesions 2. Post-operative fæcal fistula 1.

*Fatal case. Pericæcal adhesions; post-operative fæcal fistula into ileum.*—F. E.—, male, æt. 32, mariner. Three years ago laid up with malaria in South America for 6 months; during last 9 months before admission morning vomiting was occasionally noticed. Alcoholic habits moderate. Four months before admission, while in South America, patient was feverish and constipated. He was treated for a period of 3 months by rest in bed, a milk diet, and purgatives. Considerable loss of weight resulted, and patient suffered from almost daily spasmodic attacks of pain in the neighbourhood of the umbilicus. The pain was not severe and lasted only a few minutes; a slight swelling was observed to the right of the umbilicus. On admission an occasional wave of peristalsis was

observable passing from right to left just above the umbilicus. Respiratory movements good. Palpation revealed a large firm mass in right iliac fossa, extending upwards to the level of umbilicus, inwards nearly to the mid-line, and outwards into the lumbar region. No tenderness. Percussion note impaired only over outer part of swelling. Exploratory coeliotomy on 4th day revealed dense adhesions, with thickening of omentum and peritoneum in neighbourhood of cæcum. The abdomen was closed. Microscopically no evidence of tuberculosis, actinomycosis, or malignant disease. Stitches removed on 8th day; slight swelling, rather painful on pressure, observed at lower part of incision. Fæcal fistula observed 10 days after operation. This fæcal fistula continued to discharge fluid fæcal matter and was evidently connected with the ileum. Patient became increasingly emaciated, and 3 months after the fistula was first observed patient was taken to theatre and the wound examined. Skin around fistulous opening had become digested and closure of the fistula was quite impossible. The amount of discharge varied from day to day, but the fistula never closed and death occurred 4 months after admission. P.M.—No acute peritonitis. Intestines in lower part of abdomen closely matted together, the adhesions being especially dense around cæcum. No thickening of parietal peritoneum except in right iliac fossa. Upper parts of peritoneal cavity fairly free from adhesions. Opening in abdominal wall led into ileum 6 feet above ileo-cæcal valve. The appendix lay on inner side of cæcum, in the midst of a mass of dense adhesions. It was twisted upon itself and its lumen was partially obliterated; apparently it had been the subject of past inflammation. The remainder of the intestinal sac was healthy. A few pleural adhesions present on both sides. Other organs healthy.

*Fæcal fistula.*—Males 3; females 4. After appendix abscess 1; appendicectomy 1; nephrectomy 1; gastro-jejunostomy 1; aspiration of intra-peritoneal abscess 1; drainage of pyosalpinx (tuberculous) 1. Readmission 1.

*Treatment.*—Lateral colic anastomosis 1; appendicectomy and closure of ileum without drainage 1; oophorectomy and closure of fistula 1; plastic 3; nil 1.

*Cirrhosis of liver.*—Male 1; females 2. Transferred to Medical side, where death took place, 1.

*Treatment.*—Scarification of liver 2.

## GENITO-URINARY SYSTEM.

*Urethral stricture.*—Males 49. Died 5.

*Situation.*—Bulbous and bulbo-membranous 46; penile 1; congenital meatal stricture 1; traumatic stricture 1.

*Complications.*—Retention 15; fistula 4; peri-urethral abscess 7; extravasation 4; urethral calculus 1; cystitis 3; infective endocarditis 1.

*Treatment.*—Dilatation 21; internal urethrotomy 16; external urethrotomy 5; Cock's puncture 2; incision of peri-urethral abscess 7; incision for extravasation 4; cystoscopy and segregation 1.

### *Fatal cases.*

1. *Urethral stricture; cystitis; infective endocarditis.*—A. M—, male, æt. 47,

clerk. Gonorrhœa 15 years ago. Attack of retention 4 years before admission; relieved by catheterisation, and subsequently treated with sounds. History of rheumatic fever on three occasions. Two months before admission increasing difficulty in micturition, with pain referred to penis on passing water. Patient had been, until this time, in the habit of passing a sound upon himself, but had neglected its use for one month, and at onset of present symptoms had been unable to get through his stricture. On examination bladder was not distended, nor was there any tenderness above the pubes. Tenderness, however, was present on palpation over both kidneys. Urine acid, containing pus. During first 24 hours in hospital patient passed 38 oz. of urine, and on the evening of the next day temperature rose suddenly to  $105.2^{\circ}$  and rigor occurred, pulse increasing from 80 to 116, respirations from 20 to 36. On 4th day internal urethrotomy was performed by Teevan's method and the bladder was washed out with a solution of 1 in 2000 perchloride. The following day condition was much worse, temperature being  $103.8^{\circ}$ , pulse rate 180, and only 5 oz. of urine were passed in 24 hours. Some diarrhœa was present. Death occurred on 5th day. P.M.—Bladder walls much thickened, showing advanced cystitis. Prostate hypertrophied and tough. No false passages leading from urethra. Ureters and kidneys both healthy. Recent adhesions between pericardium and left pleura. Pericardium universally adherent to heart and great vessels. Adhesions separated with slight difficulty. No free fluid in pericardium. Heart showed recent vegetations on aortic valve and also on anterior flap of mitral valve. Myocardium healthy, no hypertrophy. Pleuræ showed old adhesions on both sides, and lungs obsolete phthisis at both apices, being bulky and congested. Spleen large and diffuent, exhibiting two recent infarcts.

2. *Urethral stricture, penile; arteriosclerosis.*—H. K—, male, æt. 71, house painter. Rheumatism at age of 50. Gonorrhœa infection at age of 22. Difficulty in micturition of three years' standing. "Catheter life" for two years. Great pain, referred to tip of penis, and frequent desire to micturate. The day before admission patient was unable to pass his catheter and therefore came to hospital. On admission two strictures were found in the urethra—one in penile portion and one at bulbo-membranous junction. A No. 6 catheter was passed and the bladder emptied. Urine 1012, very alkaline, fair quantity of albumen present, no blood or sugar, pus-cells and granular *débris* present, no casts seen. Two days after admission, the urine having been drawn off by daily catheterisation, temperature rose to  $104.2^{\circ}$ , and patient had a rigor. Temperature fell again to normal the next day and remained only slightly raised for two days, and then an anæsthetic was administered and internal urethrotomy performed. A No. 12 catheter was tied into the bladder. A second rigor occurred shortly after the operation, temperature being  $103^{\circ}$ . Patient complained of considerable pain in left leg and left calf was found to be somewhat swollen and tense. On the following day skin over leg showed bluish discoloration. Tibial pulse could be felt, though it was diminished in volume. Discoloration of skin was also present in perineum. Urine very alkaline, containing both blood and pus. Temperature 24 hours after operation was subnormal and remained so for three days, but pulse became progressively weaker, and death occurred on 11th day. P.M.—Internal urethrotomy had divided all structures composing wall of urethra and had

wounded surrounding cellular tissue. Stricture was 1 inch from bulbo-membranous junction in penile portion. There was marked cystitis, the inflammation extending about 3 inches up both ureters. Kidneys showed interstitial nephritis. Aorta and iliac arteries were tortuous and full of arteriosclerotic plaques. A recent thrombus was present 1 inch above bifurcation of aorta, and a second clot was present in popliteal artery just above its division. Anterior tibial was occluded, posterior patent. Left ventricle hypertrophied. Atheroma of thoracic aorta. Old-standing adhesions in pericardium. Lungs congested.

3. *Stricture; retention; extravasation of urine*.—G. S—, male, æt. 43, coachman. Gonorrhœa 23 years ago. Reinfection 3 years ago. Stricture present ever since. Admitted with retention of 1 day's duration, unsuccessful attempt at catheterisation being performed before admission to hospital. On examination a stricture was found at the bulbo-membranous junction. Patient was able to pass some urine, although attempts to pass the stricture with a Gouley catheter were unsuccessful. Six and a half ounces were passed during the first night, the urine containing blood. During the next 24 hours 41 oz. were passed, and the next week micturition was normally performed. At the end of this time patient was anaesthetised and passage of sounds was attempted, but none could be passed through the stricture. The urethra was washed out with saline, and it was afterwards noticed that the scrotum contained fluid and air. The following day external urethrotomy was performed by Wheelhouse's method, a No. 12 gum-elastic catheter being tied into bladder. This operation was followed by a rigor, temperature reaching 103°, pulse-rate 102. Temperature fell to normal the next day, but the scrotum was found to be greatly swollen and the skin over it gangrenous. Free incisions were made into scrotum, and patient was treated with daily baths. Catheter was removed on 6th day, and in the succeeding 24 hours 25 oz. of urine were passed naturally. Perineal fistula began to close, and 24 days after admission the granulating surface of scrotum was grafted. Condition remained good for 4 days, when patient died suddenly, having only 5 minutes previously complained of nausea and abdominal pain. P.M.—Bridle stricture at bulbo-membranous junction with two false passages opening into floor of urethra in front of it. External urethrotomy wound still patent. Bladder contracted, walls greatly hypertrophied, mucous membrane intensely inflamed. Kidneys markedly congested, but no sign of suppuration or pyelitis. Lungs congested. Atheroma of aorta and of pulmonary arteries. Other organs healthy.

4. *Urethral stricture; extravasation of urine*.—W. F—, male, æt. 55, railway gateman. Gonorrhœa rather more than 15 years ago. Symptoms of stricture for 15 years, treated at intervals by passage of sounds. Fourteen days before admission pain in perineum noticed in sitting down or in passing water. Twenty-four hours before admission penis began to swell, and 12 hours later was observed to be black in places. A little urine was passed on day of admission, but it was thick and offensive. On examination bladder distended, reaching nearly to umbilicus; penis swollen and œdematous, several blebs observed on its surface with destruction of cuticle in other areas; the skin was black in distal 2 inches. Scrotum and perineum were greatly swollen, the skin being red and œdematous. A similar condition was present to a less degree in abdominal wall above pubes.

On day of admission multiple incisions were made to relieve the extravasation and external urethrotomy was performed. As catheter could not be introduced through this into the bladder, drainage into dressings was allowed. Condition was very bad, a rigor occurred shortly after operation, the pulse-rate was 130, and temperature fell below normal. Condition showed temporary improvement, but pulse was always very feeble and the temperature usually subnormal. Urine discharged freely, but death occurred 4 days after admission. P.M.—No trace of membranous urethra could be found. Penis was gangrenous and bladder was enlarged, inflamed, and its mucosa covered with phosphates. Pus filled both sides of scrotum, and was also present in planes of abdominal wall as high as umbilicus. Kidneys normal, lungs emphysematous and bronchitic. Other organs healthy.

5. *Urethral stricture; extravasation.*—G. W. D—, male, æt. 57, cabdriver. Gonorrhœa 27 years ago. Difficulty in micturition more or less ever since. Patient in the habit of passing a catheter for some time before admission. Recently there has been difficulty in getting this through. Recent attack of bronchitis. Six days before admission swelling was noticed in the scrotum, and passage of catheter was impossible. The swelling became larger, and gradually spread to upper part of thighs. For 2 or 3 days little or no urine passed, swelling spreading steadily over abdomen. On admission extravasation was found to have extended to axillæ, and scrotum was in a gangrenous condition. The same day multiple incisions were made through skin in area of extravasation, and a Cock's puncture was performed. Patient collapsed after operation, infusion with saline 1 pint and 15 minims of adrenalin was carried out, but death occurred within 12 hours of admission. P.M.—Gangrenous cellulitis of scrotum and lower abdominal wall. Both tunicæ vaginales were full of offensive pus. The urethra, traced from the glans, appeared to terminate 1 inch in front of triangular ligament. Behind this the canal was represented by a ragged and sloughing cavity communicating with the infiltrated tissues in the perineum. Urinary bladder hypertrophied, showing some degree of cystitis. Lungs œdematous. Heart and pericardium normal, no peritonitis, abdominal organs showed cloudy swelling.

*Enlarged prostate.*—Males 31; died 13. Retention 16; cystitis 15; vesical calculi 3; prostatic calculus 1; bulbous urethral stricture 2; extravasation 1; suprapubic fistula 1; peritonitis 1.

*Treatment.*—Enucleation of prostatic adenomata 8; enucleation with prostatic urethra 6; all by suprapubic route; suprapubic cystostomy 5; catheterisation, lavage of bladder, or medical treatment in the remainder.

#### *Fatal cases.*

1. *Enlarged prostate; cystitis.*—S. E—, male, æt. 60, labourer. Difficulty in micturition for 3 months. Three attacks of retention relieved by catheter. Very frequent nocturnal micturition during this period. Three days before admission patient succeeded in relieving his retention by the passage of a catheter; 2 days later he was seized with attack of shivering whilst at work. Seen by doctor and admitted to hospital. On examination, very feeble patient with weak pulse, rate of 160 per minute; severe pain over pubes, where there was well-marked

tenderness on pressure. Urine alkaline, containing much pus, blood, and albumen. Temperature 102° on admission, rising to 101.5° before death, which occurred 8 hours after admission. P.M.—Thoracic organs healthy with exception of slight aortic atheroma. Peritoneum and intestines healthy. Spleen large, soft, and diffuent. Kidneys showed moderate degree of interstitial change. Bladder exhibited septic cystitis, with marked injection and swelling of mucosa; prostate enlarged; no evidence of malignant disease.

2. *Enlarged prostate; fibro-adenoma; partial enucleation by suprapubic route.*—B. E—, male, æt. 60, music-teacher. No history of venereal disease. Nocturnal micturition, during last 4 years, every hour, always causing severe burning pain in penis. Similar frequency during daytime. On admission prostate was found by rectal examination to be very hard and nodular, though not very large. Catheter passed easily. Urine alkaline, with trace of albumen; no pus. Three days after admission amount of urine passed was greatly diminished, and operation was performed on 8th day. The bladder was opened above the pubes and prostate was partially enucleated, the gland being very fibrous and difficult to remove. During the same evening the drainage-tube carried off almost pure blood, and patient's condition became gradually worse. Efforts to stop the hæmorrhage were made by lavage with hot saline and local application of extract of hamamelis, but patient's pulse became weaker and he died within 6 hours of operation. P.M.—The bladder was full of clots; mucous membrane pulpy and thickened, containing a number of enormously congested varicose veins. Right lobe of prostate had been partially shelled out. Urethra was intact. Kidneys were healthy, but left ureter was somewhat dilated owing to obstruction of lumen by hypertrophied mucous membrane of bladder. Peritoneum was healthy with exception of splenic capsulitis. Well-marked atheroma of aorta was present, and the medium-sized arteries were also thickened. The heart was hypertrophied, aortic and mitral valves show degenerative changes. Heart-muscle pale and friable. Old adhesions at apices of both lungs, with fibroid and calcareous tubercle in both upper lobes.

3. *Enlarged prostate; retention; suprapubic prostatectomy; cystitis and broncho-pneumonia.*—L. D—, male, æt. 62, teacher of fencing. History of frequency and difficulty in micturition for past 3 years. Admitted with retention of 1 day's duration. On admission retention was relieved by a silver catheter which had to pass a penile stricture 8 inches from the meatus, as well as the prostate, which, on rectal examination, was found to be considerably enlarged, with a hard, nodular right lobe. Urine acid; albumen and blood both present, the latter in large amount. Retention persisted but was relieved by 8-hourly catheterisation. On the 4th day after admission patient's temperature rose to 103°, and the bladder was opened above the pubes and the prostate completely enucleated. Drainage was effected by Guyon's tube. The following day a rigor occurred, with temperature of 104°, and during the next few days patient became very restless and complained of great thirst. Sedatives were administered. Pulse rate increased and remained above 100. Temperature remained high with daily intermissions, and patient had rigors on several succeeding days. Infusion with saline on the 5th day after operation improved the general condition, but patient rapidly became apathetic, and extravasation of urine into the penis, scrotum, and



prevesical tissues was observed 11 days after operation, and death occurred on the following day. Prostate was adenomatous and weighed 100 grms. P.M.—Considerable emaciation, edges of suprapubic wounds blackened. Penis swollen and much discoloured. No peritonitis, but pelvic connective-tissue planes were blackened and offensive. Bladder-wall hypertrophied; interior acutely inflamed, and walls of cavity, from which prostate had been enucleated, were covered with foul-smelling pur. Prostatic urethra had been completely removed. Kidneys exhibited cloudy swelling; no ascending nephritis. Spleen and pancreas swollen and rather soft. Obsolete phthisis at left apex, with diffuse broncho-pneumonia on both sides, most marked at base of lungs. Heart enlarged but healthy.

4. *Enlarged prostate, retention; extravasation of urine; peritonitis.*—C. G.—, male, *æt.* 84, carpenter. Six years previous to admission patient had first attack of retention. No trouble again till two weeks before coming to hospital, during which period urine had been dribbling away. Catheterised on day before admission. On examination patient was very emaciated and had complete retention. Rectal examination revealed markedly enlarged prostate. Retention was relieved by a passage of a large prostatic catheter, which withdrew about 10 oz. of blood-stained, foul-smelling urine, very alkaline. Patient was very restless; retention was relieved by regular catheterisation, the amount of urine diminished, and temperature became subnormal; patient died in coma on 5th day. P.M.—Extensive peritonitis was found, with blood-stained fluid free in abdominal cavity. Fluid had ammoniacal odour. Ureters were both dilated and there was a bilateral hydronephrosis; the bladder was distended and its walls hypertrophied with gross cystitis. Prostate was enlarged greatly and covered with deposition of salts from urine. There was some extravasation in wall of bladder just above symphysis pubis. Lungs congested and oedematous, with old pleurisy and fibrotic changes on right side. Marked calcification and sclerosis of aorta. Microscopical report: Adenoma, numerous areas of inflammatory exudation; bladder tissue necrosed and infiltrated with micro-organisms.

5. *Enlarged prostate; cystitis; vesical calculi; suprapubic cystotomy.*—W. T.—, male, *æt.* 70, gardener. History of retention 9 months before admission. Pain and frequency of micturition, almost half-hourly, day and night during last three months. Appetite good; losing flesh. On admission prostate enlarged but of normal consistency *per rectum*; urine strongly alkaline, containing sugar in large quantity, with albumen and blood. Suprapubic cystotomy performed 4 days after admission; one stone, the size of a large cherry, and several smaller ones removed. Rise of temperature on 3rd day, which did not resolve. The 9th day considerable inflammatory oedema of left half of abdominal wall noticed. Several incisions were made into this, but no pus was found. Cellulitis spread up to axilla. Cystotomy wound unhealthy; lavage of bladder. On 15th day temperature rose to 103.6° and rigor occurred. From this time amount of urine steadily diminished until quantity was reduced to 2 oz. in 24 hours, and patient became comatose and died on 19th day. Calculus was composed of phosphates, carbonates, and urates; no nucleus present. P.M.—Bladder showed intense cystitis. Mucosa thickened and covered with greenish-yellow exudate. No remaining calculi found. Prostate enlarged, especially in middle portion, with

distinct post-prostatic pouch of bladder; adenomatous on section. Ureters normal; kidneys rather pale and fatty. Extensive atheroma of aorta, with thickening of aortic valves. Valves competent. Other viscera healthy.

6. *Enlarged prostate, urethral strictures; cystitis.*—C. T—, male, æt. 65, coach-body builder. History gonorrhœa at age of 19. Difficulty in micturition for short period 20 years before admission. Present history of 5 weeks' irritability of bladder, with painful micturition. Rectal examination revealed some enlargement of prostate. Condition of hypospadias present, affecting glands only. Urine could not be withdrawn by catheter, and shortly after this was attempted temperature rose to 106°, falling to 99° during next 12 hours. From the 3rd to 5th day there was suppression of urine. Patient was drowsy and had muscular twitchings. He was treated with hot-air baths, administration of pilocarpine and jalap, and was infused with 2 pints of saline after withdrawal of  $\frac{1}{2}$  pint of blood from vein. Marked reaction to this treatment was observed and amount of urine passed increased to 70 oz., and remained above the normal for the following 9 days. During this period temperature was subnormal, and patient suffered from diarrhœa. Urine was always alkaline, contained pus and trace of albumen. On 15th day patient became comatose, and died 24 hours later. P.M.—Bladder walls hypertrophied, with well-marked cystitis. Prostate large, and of cartilaginous hardness. Kidneys showed mixed neuritis. Lungs congested and œdematous. Old pleural adhesions on both sides. Heart valves competent, left sided hypertrophy, with thickening of aortic cusps. Some degree of atheroma of aorta. Right lobe of thyroid enlarged, containing a cyst 1 inch in diameter with calcified wall. Remainder of gland showed parenchymatous enlargement.

7. *Enlarged prostate; retention; hydronephrosis.*—E. T—, male, æt. 67, watchman. Difficulty in micturition of 4 months' duration. Retention 10 hours. No catheter could be passed in Out-patient Department. Operation on evening of admission, suprapubic cystotomy being performed. A large amount of foul-smelling urine was evacuated. Bladder washed out with saline and supra-pubic drainage used. After operation amount of urine steadily diminished, and temperature remained subnormal. The urine contained a large amount of albumen and some pus; reaction alkaline. Symptoms of uræmia developed, and patient died 5 days after operation. P.M.—Body emaciated. Bladder wall hypertrophied and fasciculated. Middle lobe of prostate projected so as to obstruct urethral orifice. Prostate adenomatous, not urethral stricture. Both ureters somewhat dilated, and kidneys showed moderate hydronephrosis, with much interstitial change. Left ventricular hypertrophy, no valve lesions. Lower lobe of right lung showed extensive broncho-pneumonia; remainder of this lung and whole of left highly œdematous.

8. *Enlarged prostate; retention; suprapubic enucleation.*—J. L—, male, æt. 68. Under treatment for difficulty in micturition for 12 months before admission. Fourteen days before admission attack of retention. Efforts at catheterisation unsuccessful. Bladder distended and urine passed involuntarily. Bladder fully distended on admission. Suprapubic cystotomy performed the same day. Prostate found considerably enlarged and easily shelled out. Supra-

pubic drainage. Only 6 oz. of urine passed in succeeding 24 hours. Bladder occupied by blood-clot, which was washed out, though patient was in a comatose condition. No improvement occurred, and death took place on morning of 3rd day. Pathological report: Pus present in urine, pure culture of *Micrococcus albus* from interior of prostatic gland; the same organism grown from urine. Microscopically, fibro-adenoma. P.M.—Cavity left by removal of prostate, and rest of bladder full of recent blood-clot. Well-marked cystitis. Right kidney showed pyelitis, left normal. Aortic atheroma, with some enlargement of heart, valves healthy. Chronic bronchitis and emphysema, with some œdema of lungs.

9. *Enlarged prostate; suprapubic enucleation; pyelo-nephritis.*—S. N—, male, æt. 69, cabman. Pain and difficulty in micturition for 12 months. Frequent nocturnal micturition 1 month. Attack of retention 1 week before admission. On rectal examination prostate found to be uniformly enlarged. Urine acid, 1·020, no albumen or sugar. Enucleation of prostate by suprapubic route on 4th day. Bladder drained with suprapubic tube. With exception of persistent high temperature, patient did fairly well after operation. Bladder drained satisfactorily until the 3rd week, when signs of exhaustion appeared, with offensive diarrhoea and increasing abdominal pain. Wound appeared, healthy, but cystitis was evidently present. Lavage of bladder improved the condition only slightly, and patient died at beginning of 4th week. P.M.—Bladder showed advanced cystitis, walls thickened, and mucosa pulpy. Phosphatic concretions present on bladder wall, the cavity containing a few ounces of foul-smelling urine. Both ureters showed inflammation, and the kidneys were infiltrated with pus. Remaining organs healthy.

10. *Enlarged prostate; cystitis; suprapubic drainage.*—J. W—, male, æt. 65, carpenter. Six years' difficulty in micturition. Occasional hæmaturia noticed. Attack of retention 10 days before admission relieved by catheter; 40 oz. of residual urine withdrawn in hospital. Bladder opened above pubes on 4th day, and drainage effected by means of Sprengel's pump. Drainage satisfactory, but general condition bad. Some fever and increase of pulse rate after operation. This persisted for a week, when temperature became subnormal, amount of urine diminished, and patient became progressively weaker, death occurring at the end of 3rd week. P.M.—Suprapubic wound healthy. Bladder showed intense cystitis. Prostate uniformly enlarged to double normal size. Urethra compressed laterally, section showed multiple small adenomata. Ureters healthy. Kidneys cardiac and congested. Pericardium showed numerous punctate hæmorrhages in visceral layer, and contained a little puriform material. Heart enlarged and very flabby. Old pleural adhesions obliterating left sac; right normal. Lungs œdematous.

11. *Enlarged prostate; cystitis; suprapubic enucleation with urethra.*—R. N—, male, æt. 70, pensioner. Dysuria noticed for 3 months. Frequent nocturnal micturition 1 month before admission. Some scalding pain. On rectal examination, slight enlargement felt. Urine acid, slight trace of albumen; 14 oz. of residual urine drawn off by catheter. Enucleation of prostate by suprapubic operation on 6th day. Drainage of bladder by suprapubic tube. Drainage

unsuccessful; condition of patient bad; a good deal of pain experienced and marked sleeplessness. Bladder washed out daily. Temperature on 2nd day after operation rose to 100°, pulse-rate 120, and death occurred suddenly 3 days after removal of prostate. Weight of gland 20·6 grm. Microscopically adenomatous. P.M.—Intense cystitis, some prostatic tissue still remaining representing cortex of prostate. No extravasation of urine. Prostatic urethra removed with tumour. Both ureters and kidneys normal. Abdominal viscera normal, some emphysema of lungs and slight aortic atheroma.

12. *Enlarged prostate; extravasation of urine.*—F. P—, male, *et.* 65, warehouseman. Five years' history of frequent and painful micturition. Worse during last 3 weeks. On admission, tenderness above pubes, natural passage of only small quantities of urine. Catheter not passed beyond the prostate. Bladder enlarged. Prostate easily felt *per rectum*, and slightly enlarged. Rigor with temperature of 104·4 on 2nd day, and repeated rigors on 5th, 6th, 7th, and 9th days. The last occurred after passage of catheter; 3 days later catheter could not be passed and patient had dribbling incontinence. Swelling in perineum, penis, and scrotum, was observed and treated by multiple incisions, catheter being passed under anæsthetic. Temperature remained high and the condition did not improve, patient became sleepless, pulse weakened, diarrhœa was observed, and death occurred on 24th day. No P.M.

13. *Enlarged prostate; retention; suprapubic drainage.*—O. McC—, male, *et.* 74, pensioner. No history of venereal disease. Previous attacks of retention, 4 years and 2 years before admission; relieved on both occasions by catheter. History of retention for 2 days, with great pain over pubes and in rectum. Urine dark red in colour, acid, 1030, containing blood. Catheterisation was carried out regularly for 2 days, and on 3rd day, after washing out bladder, it was opened above the pubes and drained by Sprengel's pump. Condition after operation fair, pulse over 100, temperature 102°. Improvement for 2 days, drainage successful, but on 3rd day after operation pulse failed and death occurred. P.M.—No peritonitis, suprapubic wound healthy. Prostate enlarged to thrice the normal size, due to discrete adenomatous masses imbedded in gland. Prostatic urethra stretched out but not contorted, obstructed by lateral projections of prostate. Several small, ovoid calculi present in connective tissue around prostate. Origin of these uncertain. Bladder wall hypertrophied and fasciculated. No appreciable cystitis, except for erosion of mucosa over prostate. Two false passages present with openings in front of triangular ligament. Lungs intensely engorged and œdematous. Heart-muscle fatty and friable. Valves healthy. Spleen semi-diffuent but not enlarged, kidneys showed only slight fatty changes in cortex, ureters healthy.

*Acute prostatitis.*—Males 3. Suppurative 2; retention 2.

*Treatment.*—Catheterisation 2; baths 1.

*Tuberculous cystitis.*—Males 2. Tubercle bacilli present in 1.

*Treatment.*—Suprapubic cystotomy 1; tuberculin 1.

*Chronic cystitis.*—Males 6, females 8. Died 1. Suprapubic fistula 1; pure culture of colon bacillus from urine 1.

*Treatment.*—Suprapubic cystotomy 1.<sup>1</sup> Lavage and medicinal treatment in the remainder.

*Fatal case. Chronic cystitis; suprapubic cystotomy.*—H. F. M—, male, æt. 69, draughtsman. History of painful and frequent micturition for 10 years. Blood noticed in urine on several occasions. No history of gonorrhœa or stricture. Nocturnal micturition very troublesome during last 10 months. Rectal examination revealed irregular enlargement of prostate; 6 oz. of residual urine withdrawn. Urine acid, slight trace of albumen, no sugar or blood. Amount of urine over 70 oz. in 24 hours, marked sleeplessness. Suprapubic cystotomy performed on 6th day. Bladder wall found to be greatly thickened, apparently due to infiltration with new growth. Bladder closed, wound drained. Operation followed by great diminution in amount of urine, only a few ounces being drawn off by catheter during succeeding 48 hours. Evidence of extravasation was present, pulse rate rose to 136, and death occurred on 9th day. P.M.—Considerable perivesical extravasation of clotted blood and urine, the tissues being infiltrated and rotten. Bladder walls universally thickened and very hard. Mucosa thickened, soft, spongy, and bleeding, a little purulent urine still remaining in bladder. Prostate not much enlarged. Kidneys showed dilation of pelvis and diminution of cortex on both sides. Ureters slightly dilated, evidently due to obstruction caused by thickening of bladder wall. Very marked atheroma of aorta and thickening of aortic valves, heart otherwise normal. Lungs both congested. Pathological report: Chronic thickening of mucous membrane of bladder, with extensive suppuration in outer wall. Kidney showed chronic interstitial nephritis.

*Vesical bilharziosis.*—Male 1. Infection acquired in South Africa. Transferred to Medical side. See "Medical Report."

*Vesical calculi.*—Males 6. Died 1; 24 uric acid calculi the size of a large pea removed in one case.

*Treatment.*—Removal by suprapubic route 5; litholapaxy 1; subsequent cystoscopy and lavage 1.

*Fatal cases.*

1. *Vesical calculi. Suprapubic cystotomy.*—T. B—, male, æt. 63, beer retailer. Pain on micturition first observed 18 months before admission; 12 months later small round calculi passed in urine, and at frequent intervals since that date. Occasionally hæmaturia, no history of renal colic. Urine healthy. On day after admission attempt was made to crush calculi, but lithotrite could not be passed beyond prostate. One small stone removed in eye of evacuating tube. Incision made into bladder above pubes and 23 calculi removed, of the size of large dried peas, having brownish centre and yellow smooth exterior. Bladder wall closed with sero-muscular silk sutures. Wound partially closed. Progress uneventful till 5th night after operation, when temperature rose to 103° and pulse was 116; 61 oz. of urine had been passed in preceding 24 hours. The following morning patient exhibited restlessness, frequent plucking at bed-clothes with hands was observed, the patient was somewhat delirious. These symptoms persisted, amount of urine passed fell to 30 oz. in 24 hours, and it

was noticed to be alkaline and to contain albumen; and on 8th day after operation temperature reached 106°, when death took place. Calculi entirely composed of uric acid. P.M.—Peritoneal cavity normal. Bladder in condition of acute cystitis. Cavity small. Extensive infiltration of perivesical tissue, with multiple small abscesses containing foul-smelling pus. Both ureters acutely inflamed, the right showing evidence of congenital stricture 1½ inch below pelvis of kidney. Both kidneys enlarged, exhibiting acute pyelitis. Renal substance showed intense congestion of pyramids with some swelling of cortex. Capsule stripped readily. Liver large and extremely fatty. Spleen soft and diffident. Lungs intensely congested. Heart normal.

*Renal calculus.*—Males 8, females 2. Death under anæsthetic before operation 1. Readmission 1. Oxalate 2; mixed phosphate and carbonate 2; phosphate 1. Perinephric abscess 1; pyelitis 1.

*Treatment.*—Lumbar nephrolithotomy 7. Segregation 1.

*Fatal case. Perinephric abscess; renal calculus; death under chloroform.*—W. B—, male, æt. 46, waiter. Eleven years ago operation in Charing Cross Hospital for vesical calculus. One year before admission patient was ill in bed for 13 weeks with attack of pain in right loin. Since this time he had been following his occupation. Seven weeks before admission severe pain in right loin. After 3 days patient ceased work, owing to inability to put right leg to ground. Remained in bed, but this gave little relief to pain, which was felt on right side of abdomen, back, and down the groin. Pain was at times severe enough to cause profuse sweating and retching, but no actual vomiting occurred. Swelling in right loin observed 1 week before admission. No difficulty in micturition, no history of hæmaturia, though urine was occasionally thick. State on admission: patient lay in bed on left side with right leg drawn up, evidently in severe pain, abdomen rigidly contracted on right side, with a well-marked swelling in right lumbar region. The note on percussion over this mass was dull, and fluctuation could be obtained. No redness of skin, and no tenderness over vertebral spines. Urine 1020, acid, trace of albumen, heavy deposit of pus. Chloroform was administered on 2nd day, but before incision was made patient stopped breathing and all efforts at respiration were unavailing. Inquest. P.M. revealed large tumour of right kidney, due to calculous pyelitis with replacement by fat, very little renal tissue remaining. The mass was adherent both to intestines and inferior vena cava.

*Movable kidney.*—Females 28. Right 22; left 1; right and left 5. Pyuria 1.

*Treatment.*—Exploratory nephrotomy 2; nephropexy 21.

*Hydronephrosis.*—Males 3, females 2. Calculus 1. Right 3; left 2.

*Treatment.*—Lumbar nephrotomy 2; nephrectomy 3.

*Pyonephrosis.*—Females 2. Tuberculous 1. Right femoral thrombosis 1.

*Treatment.*—Lumbar nephrotomy 2; subsequent nephrectomy 1.

*Tuberculous kidney.*—Male 1, female 1.

*Treatment.*—Lumbar nephrectomy 1; nephrotomy and erosion of cortical tubercle 1.

*Renal bilharziosis.*—Male 1. Bilateral renal colic.

*Treatment.*—Exploratory nephrotomy; transferred to Medical side.

*Undescended testis.*—Males 10. Right 3; left 1; bilateral 6. See also under "Reducible Inguinal Hernia," with one case of pseud-hermaphroditism.

*Treatment.*—Orchidopexy 9; abdominal reposition of testis 2; orchidectomy 2

*Tuberculous testis.*—Males 17. Readmission 1. Right 5; left 12.

*Treatment.*—Orchidectomy 7; epididymectomy 6; incision and scraping 2.

*Hydrocele of tunica vaginalis.*—Males 85. Died 1. Bilateral 3; recurrent 2; after excision of varicocele 4; after radical cure of hernia 1. Congenital 1; infantile 2. Hæmorrhoids 1.

*Treatment.*—Excision of parietal layer 31; sac turned inside out 4; extra-ventration of testis 1. Partial Whitehead 1.

*Fatal case. Infantile hydrocele; no operation; broncho-pneumonia.*—A. L.—, *æt.* 6 months, male. Hydrocele present from birth; child otherwise healthy, until 2 days before admission, when cough was first observed. Condition of child on admission was grave, and there were signs of small-tube bronchitis. Death on day after admission. P.M.—Body well nourished, hydrocele on right side extending up cord as far as internal ring. No communication with peritoneal cavity. No inflammation of sac. Right pleura contained a little clear fluid, and both lungs showed early broncho-pneumonia. Thymus gland large, weighing  $\frac{1}{4}$  ounce. Structure normal. Other organs healthy.

*Encysted hydrocele of cord.*—Males 2.

*Treatment.*—Excised both cases.

*Hæmatocele.*—Males 3. Died 1. Enlarged prostate 1.

*Treatment.*—Excision 2; orchidectomy 1.

*Fatal case. Hæmatocele; enlarged prostate.*—H. S.—, *æt.* 61, male, brick-layer. Family history and past history good. No venereal infection. Twelve months before admission patient noticed swelling of left testicle. There was no pain, and the swelling gradually increased in size until 5 weeks before coming to hospital, when it was tapped. Nearly  $\frac{1}{2}$  pint of "blood and water" was withdrawn. The fluid re-collected, and the swelling was again tapped on two occasions. On admission the left side of scrotum showed an enlargement which extended as high as the external abdominal ring. The swelling was slightly tender, the skin was not red. On palpation cord showed general thickening on this side, and the vas appeared harder and larger than on the right. The swelling was tense and fluctuating, but was not translucent; the testicle could be felt at posterior and lower part of swelling. On 3rd day the swelling was tapped, and turbid brown fluid was withdrawn. General enlargement of the epididymis was then felt. The following day the tunica vaginalis was incised, its wall being very thick. The tumour was found to be a hæmatocele, but orchidectomy was decided upon, and the wound was washed out with zinc chloride and drained. Discharge from wound was considerable, but condition of patient was quite good for 6 days, when great difficulty in micturition was observed, and 15 oz. of residual urine were found to be present in bladder. Rectal examination revealed considerable enlargement of prostate. Amount of

urine passed was about 30 oz.; it was alkaline, containing albumen, blood, and pus. On 16th day oedema of left leg below the knee was noticed, with signs of fluid in ankle-joint. Femoral vein was tender. The following day temperature rose to 102°, and patient was delirious at night. One pint of residual urine was drawn off, although bladder had been washed out daily. Patient became mentally confused and progressively weaker. Death on 21st day. Microscopical report: Calcified hæmatocele. P.M.—Prostate slightly enlarged, bladder walls greatly hypertrophied, with gross cystitis. Ascending pyelitis on both sides, with abscesses also in renal cortex. Lungs congested and bronchitic. The heart showed left-sided hypertrophy.

*Chronic mastitis.*—Females 23. Cystic 16; lobar 1; bilateral 2; dental cyst 1.

*Treatment.*—Amputation of breast and clearance of axilla 1; amputation of breast 12; excision 8; local applications 3; incision and drainage of dental cyst 1.

*Subacute mastitis.*—Females 2.

*Treatment.*—Incision 1; partial excision 1.

*Tuberculous mastitis.*—Female 1.

*Treatment.*—Amputation and clearance of axilla.

*Ruptured tubal pregnancy.*—Females 2. Also uterine pregnancy 1. For other cases see "Medical Report."

*Treatment.*—Removal of sac and appendages in both.

*Ruptured tubal gestation; uterine pregnancy; removal of sac; uterine abortion; recovery.*—B. L. B.—, female, æt. 34, married. Menstruation began at age of 17 and remained regular until marriage, 11 years ago, during which time patient has had six confinements, all but one being premature, the five miscarriages taking place at four, four and a half, four, five, and six and a half months respectively; the living child was born in 1897, at the third confinement. Patient has suffered from shortness of breath and swelling of legs for the last 12 years. Since the last miscarriage menstruation was regular until one month before admission, when a period was missed and patient thought she was six weeks pregnant. General health remained good until the day before admission, when there was sudden pain in lower abdomen. This pain lasted only a short time, but similar attacks were repeated during the day, and at night vomiting and diarrhoea also occurred. The following morning pain was diminished, but it recurred in the afternoon, when patient became faint. For 24 hours before admission slight hæmorrhage from the vagina had been observed. On admission the patient was very blanched and restless; the abdomen was greatly distended and moved very slightly on respiration. It was tender to palpation, and the percussion note in both flanks was dull. Vaginal examination revealed a soft swelling on left side of uterus, and the uterus itself was enlarged. Pulse 120 and feeble, temperature 100°. Immediate operation was performed, presumably 24 hours after rupture of sac. The abdomen was opened through left rectus, and the peritoneum contained fluid blood and dark clots. The right tube was found to be ruptured about 1½ inches from its fimbriated end, and half extruded from the tube were the remains of an ovum. The tube was ligatured and removed. The uterus was observed to be bulky. Infusion was carried out during



operation with 4 pints of saline and 10 minims of adrenalin chloride (1 in 1000), and the abdominal wound was closed. Two hours after operation patient was discovered to have difficulty in speaking and to have no power in right arm. Temperature was then 98.4°, pulse 104, of good volume and tension. The following morning there was well-marked motor aphasia, and the right arm could not be moved, but the right leg was only slightly affected. Right side of face showed marked weakness. Right knee-jerk increased. Plantar reflex flexor, no clonus. Movements of eyes good. Area of cardiac dullness slightly enlarged. A systolic apical murmur could be heard, conducted a short way towards axilla. Pulmonary second sound accentuated. Pulse irregular but good. No history of rheumatism; condition attributed to cerebral thrombosis. This cerebral condition showed gradual improvement. On sixth day abortion of uterine pregnancy took place and the ovum was found to contain an embryo of size corresponding to a two months' pregnancy. On 8th day speech had greatly improved and movements of right arm could be carried out. Wound healed by first intention. From this time onward convalescence was rapid, and at the end of six weeks patient was discharged, the speech being normal and movements of right leg also normal, while right arm had nearly recovered.

*Salpingitis.*—Females 4. Died 2. Suppurative 3; pelvic peritonitis 1 general peritonitis 2.

*Treatment.*—Removal of tubes 3; with appendicectomy 1; exploratory coeliotomy 1.

*Fatal cases.*

1. *Suppurative salpingitis; general peritonitis.*—E. J.—, female, æt. 20, single. Pregnancy at age of 15; no history of vaginal discharge. Six days before admission patient had pain in lower abdomen; vomiting 2 days later. Sickness increased and pain became very severe 2 days before admission. On admission, temperature 102°, pulse 168, abdomen distended, tender, motionless in lower half. Percussion dullness above left Poupert's ligament and left flank. Coeliotomy in mid-line below umbilicus; pus found free in peritoneal cavity; bowel distended, incised, and evacuated. Both tubes thickened and distended, with pus, with extensive surrounding adhesions. Both tubes and left ovary removed. Saline infusion during operation. Appendix examined and found healthy. Saline irrigation. Drainage with Keith's tube. Abdomen closed in 1 layer. Condition after operation was very bad. Strychnine and brandy freely administered. Calomel, 5 gr., given on 3 occasions with no effect. Subcutaneous saline infusion was carried out for successive periods of 9 and 3 hours, but improvement was only temporary. Enemas were given but bowels were not open after the operation, and death occurred on the morning of the 4th day. P.M.—Acute general peritonitis, with small collections of pus in deeper parts of abdomen. Remaining pelvic organs matted together by recent fibrinous adhesions. Uterine mucosa congested and also that of bladder; spleen very soft. Condition elsewhere healthy.

2. *General peritonitis; salpingitis; abscess in left broad ligament.*—J. C.—, female, æt. 31, single, barmaid. Previous history good, though patient had suffered from slight dyspepsia; no history of gonorrhœa or pregnancy. Abdominal pain had been present for about a week, with constipation and occasional sickness.

On admission patient was in severe pain and showed signs of collapse. Temperature was 98.6°, pulse 140. Tongue dry and furred. Abdominal movement fairly good; some rigidity present in upper half, and there was tenderness on pressure all over abdomen. Percussion note impaired in both flanks, with shifting dullness. No peristalsis seen or heard, no tumour felt. Tenderness present on rectal examination. Chest *nil*. Under anæsthetic vaginal examination revealed a rather large and soft uterus; the vagina was not virginal. Immediate cœliotomy was performed and free fluid with lymph and general peritonitis was found. Appendix, which was removed, was healthy except for external inflammation and congestion at tip. Left ovary showed a small single cyst. Left tube was congested, and its lumen contained a little sticky muco-pus. Left appendages removed. Upper half of abdomen was explored but no perforation of stomach or other viscus could be found. Wound was drained, but condition of patient was desperate and she only survived a few hours. P.M.—Body well nourished. Upper air and food passages healthy. Pleural sacs normal. Lungs congested and oedematous with small pneumonic patch in lower part of right lobe. Heart healthy. Peritoneum showed general inflammation of greater sac, most intense in pelvis. Intestines showed no lesion of mucous membrane. No mesenteric thrombosis. Kidneys showed cloudy swelling, ureters normal. Portal and biliary systems healthy. Spleen large and greatly congested. Vagina normal, no trace of injury at fornices. Urethra and bladder healthy. Body of uterus large and flabby. Mucosa was free of inflammation, though there was a little discoloration near orifices of Fallopian tubes. No evidence of placental site. A little muco-pus was present in right Fallopian tube. In left broad ligament, close to uterus, and immediately below position of tube, was a localised abscess, the size of a pea; it was unruptured and contained yellow pus. Cellulitis of both thighs was present in upper part of popliteal region. A good deal of pus was present on right side. Other organs healthy.

*Fibromyoma of uterus.*—Females 3. All subperitoneal. Transferred to Gynæcological Ward 1.

*Treatment.*—Myomectomy 2.

*Urethral caruncle.*—Females 3. Recurrent 1.

*Treatment.*—Excision and cauterisation.

#### VASCULAR SYSTEM.

*Aneurysm.*—Males 6. Died 1. Readmission 1. Popliteal 2; axillary 1; common femoral 1; thoracic aorta 1 (transferred to Medical side); glycosuria 1.

*Treatment.*—Ligation of axillary artery and its branches 1; ligation of superficial femoral in Hunter's canal 1; at apex of Scarpa's triangle 1; transperitoneal ligation of external iliac 1.

*Fusiform aneurysm of common femoral artery; glycosuria; transperitoneal ligation of external iliac; cure.*—J. A—, male, æt. 37, papermaker. Family history good. Syphilis 8 years ago. Painful swelling of right testicle 5 months before admission. Twelve days before admission patient was lifting a heavy weight when he felt a strain in left groin; he continued his work, but the same

evening discovered a pulsating swelling in left groin. The pain persisted and extended down to the lower part of left thigh. On admission a visible pulsating tumour of more or less circular outline was present just below the left Poupart's ligament. Pulsation definitely expansile. Compression of external iliac at brim of pelvis caused cessation of pulsation; distal pulse slightly delayed and a little weaker than on right side. No thrill detected. Left testicle swollen and tender. Urine 1041, acid, no albumen, large quantity of sugar present, but no acetone or diacetic acid. Patient stated that he had lost 5 st. in weight in 7 years, was always thirsty, and troubled with frequency of micturition. The daily excretion of sugar amounted to 8 oz., while the amount of urine passed varied from 60 to 100 oz. Five grns. of potassium iodide were administered thrice daily for six days, and then 5 mins. of tincture of opium were given three times a day with antidiabetic diet. On 13th day ligature of the external iliac was undertaken. The operating table was adjusted at an angle of  $30^{\circ}$ , so that patient's head was below the level of his feet. A 4-inch incision was made, starting 1 inch above Poupart's ligament and  $1\frac{1}{2}$  inches to the left of the middle line. The fibres of the rectus were separated and the peritoneum opened vertically. The intestines were easily displaced and retained out of the wound by an abdominal sponge. The ureter, vas deferens, and the bladder were readily seen, together with the pulsating external iliac, beneath the posterior peritoneum. This was incised and the external iliac artery exposed about  $1\frac{1}{2}$  inches below the bifurcation of the common iliac. The artery was here secured by a double ligature of No. 3 silk, and all pulsation in the aneurysm ceased. The peritoneum was closed and the abdominal wall sutured in layers. The leg was bandaged in flannel, and on return of patient to bed the limb was elevated and hot-water bottles were applied. The following day there was no pulsation in the common femoral or popliteal, the leg was of normal temperature, but patient stated that his foot tingled and felt swollen. On 8th day pulsation could be felt in the posterior tibial behind internal malleolus. The leg felt comfortable. Two days later the pulsation in posterior tibial was no longer felt, but the circulation through the limb was perfectly good and patient had no pain. The amount of sugar in urine had diminished to 5 oz. per day and patient was only passing about 60 oz. of urine. Stitches removed on 8th day; wound healed by first intention. Patient was allowed to get up on 25th day and was soon able to walk a little; the circulation in leg remained perfectly good, though up to time of discharge pulsation had not returned in the peripheral arteries. Discharged with the aneurysm consolidated and cured on 32nd day.

*Fatal case. Popliteal aneurysm.*—H. J. W—, male, *æt.* 48, coal porter. Family history good. Patient served 21 years in the Marines, being abroad for 15 years in various parts of the world. Suffered three times from jaundice and frequently from "Tyler's fever." Alcoholic habits; no history of venereal disease. Seven weeks before admission small swelling was noticed on inner side of left thigh above the knee. For some time before this numerous septic sores had been present all over the patient's body, most marked on the legs. The swelling increased in size, and for three and a half weeks patient was in infirmary, being unable to walk. On admission to hospital a large, visibly pulsating swelling was present above left knee on inner side of thigh. The pulsation ceased on com-

pression of the thick-walled femoral artery. Pulsation in anterior and posterior tibials not felt. Leg wasted and covered with septic sores, glands in groin enlarged. Liver and spleen both greatly increased in size. Urine acid, containing a trace of albumen, no sugar. In two days the swelling was observed to increase in size; measurement around leg increasing nearly 1 inch; the skin over aneurysm was red and inflamed. Double ligature of superficial femoral in Hunter's canal was performed on 4th day. After this suppuration of sores on leg increased and the skin over swelling became oedematous, though pulsation was absent. Amount of albumen in urine increased. Evident suppuration was present around the sac and incision was made down to it, but the sac was not opened. This operation was performed on 5th day after ligature of femoral artery. The following day the patient was very restless and respirations were rapid; vomiting occurred several times, the vomit resembling coffee-grounds. Numerous crepitations were heard at left base posteriorly. Pulse was 64 and feeble, temperature subnormal. Death occurred on 11th day. P.M.—Ligature in Hunter's canal secure; the artery was occluded and clotting had occurred below it. The aneurysmal sac was represented by a large cavity among the muscles of inner side of thigh, and this was filled with decomposing blood-clot. An opening was found in upper third of popliteal artery leading into this cavity. Femoral and popliteal arteries excessively diseased and calcareous. Liver greatly enlarged, having numerous depressed scars on its surface. Bands of fibrous tissue were seen traversing its substance in all directions on section. Spleen enormously enlarged, presenting the appearance of a multilocular cyst. It contained 2 pints of dark, altered blood. The cavity was in reality single, and the apparent loculation was due to irregular thickening of its wall. An accessory spleen was found in the wall. Kidneys arteriosclerotic. Atheroma of aorta, with slight left ventricular hypertrophy. Valves thickened. Pathological report: Liver showed marked cirrhosis, with acute degeneration of hepatic cells and amyloid change in vessel walls. Kidneys showed chronic interstitial nephritis with well-marked amyloid change.

#### GANGRENE.

*Gangrene of upper extremity.*—Males 2, female 1. Died 1. Diabetes in fatal case. Finger 2; traumatic in one case. Moist gangrene of hand 1.

*Treatment.*—Incision 1. Amputation of distal phalanx 1; amputation through middle of forearm 1.

*Gangrene of lower extremity.*—Males 8, female 1. Died 6. Senile 4; moist 3; dry 2. Diabetes 3; glycosuria 3; albuminuria 2. Ages, 58, 59, 59, 61, 63, 63, 65, 69, 81.

*Treatment.*—Amputation through third of thigh 2; at seat of election 2; subsequent Carden's amputation 1. Medicine and dry dressings 5.

#### *Fatal cases.*

1. *Gangrene of finger; cellulitis; diabetes.*—J. B—, male, æt. 52, canvasser. Family history: two aunts died of consumption. No family history of diabetes. Past history: rheumatic fever 9 years ago. Diabetic symptoms first noticed 2 years before admission. Onset with thirst, frequency of micturition, and polyuria,

with disinclination for work. Never treated by dieting. Loss of 2 st. in weight during 2 years. Appetite good, no excess in alcohol. Eight days before admission patient complained of pain on outer side of proximal interphalangeal joint of right middle finger. Treated by application of poultices. Two days before admission the tip of finger became cold and purplish in colour. On admission there was gangrene of right medius on distal side of second interphalangeal joint. The rest of finger was swollen, and the skin dusky red and oedematous. Fluctuation was present beneath this, and the inflammatory oedema had spread over palm and dorsal aspect of hand. No lymphangitis, and no enlargement of axillary glands. Thoracic organs healthy; liver edge felt 1 inch below costal margin. Urine contained 24 grns. of sugar to the ounce, and amount passed on day after admission was 174 oz. Incision was made in finger and palm and pus evacuated. Local condition showed slight improvement, but amount of sugar showed very little change, the quantity of urine tending to rise, while each ounce contained nearly 20 grns. of sugar. Both acetone and diacetic acid were present in urine on 6th day, and patient was drowsy. This drowsiness persisted, temperature showed gradual increase, rising on 10th day to  $103^{\circ}6'$ , and patient grew gradually weaker; no actual coma made its appearance, but death took place on 12th day. P.M.—Pleural cavities healthy. Old tuberculous scar at apex of right lung. Both lungs emphysematous, congested, and oedematous. Heart showed left ventricular hypertrophy. Aortic and mitral valves thickened, but competent. Coronary arteries healthy, myocardium normal. Considerable aortic atheroma. Liver tough, spleen large and hard. Kidneys showed chronic interstitial nephritis, adrenals healthy, pancreas appeared normal. Gangrene of whole of right middle finger, hand black and swollen, arm oedematous but containing no pus.

2. *Senile gangrene; right foot; amputation.*—R. S—, male, æt. 69, time-keeper. One month before admission right little toe was crushed. Three weeks later it was observed to be black and dead; considerable pain was present. On admission right little toe was dry, black, and insensitive. Remaining toes were bluish in colour but retained their sensation. No line of demarcation present; marked atheroma of both anterior and posterior tibial arteries. Urine healthy, specific gravity 1010. Gangrene after admission spread somewhat, and on 5th day the fourth toe was dark-blue in colour, cold, and anæsthetic. Foot was extremely painful and patient very restless. Amputation performed on 8th day through lower third of thigh by circular method. Posterior tibial artery was thrombosed as far up as middle of calf. Condition remained fairly good, though temperature rose at times to  $100^{\circ}$ , and patient showed tendency to nocturnal delirium. On 18th day left foot was observed to be cold, and the third toe was blue and tender. The amputation wound showed practically no attempt at healing. Temperature on 15th day rose to  $103^{\circ}6'$ , fell again to  $99^{\circ}$  for 24 hours, rising the next day to  $103^{\circ}$ , and remaining about  $102^{\circ}$  until death occurred on 18th day. No P.M. No trace of albumen or sugar was ever found in the urine.

3. *Senile gangrene of feet.*—G. W—, male, æt. 81. Bronchitic subject. Fourteen days' history of dry gangrene of 1st and 3rd right toes with gangrenous areas on left foot, arteries thickened, pulsation not felt in posterior tibials. Urine, acid, 1025; no albumen, no sugar. Patient in considerable pain and very

restless, and unable to give satisfactory account of symptoms. Pain relieved by injections of heroin; gradual spread of gangrene on right foot with progressive asthenia. Death on 15th day. P.M.—Marked emaciation. Gangrene on right side extended as far as junction of upper and middle thirds of leg. Left heel blackened, pressure sores over prominent points of pelvis and right trochanter major. Dense apical adhesions on both sides. Lungs wasted and emphysematous. Bronchial glands calcareous. Heart small, coronary arteries healthy. Extensive atheroma of aorta in thorax and abdomen. In latter part of artery just above the bifurcation was an old adherent clot the size of the terminal segment of one's thumb. It was adherent to an atheromatous ulcer, and had undergone puriform softening. Vessels on its distal side contained recent red coagulum. Right popliteal artery rigid and calcareous, lumen contracted, containing an elongated, smooth thrombus occluding it; the thrombus was not adherent. Extensive disease of all the other arteries of the body. Kidneys granular. Pancreas wasted but not sclerosed.

4. *Moist gangrene of toes; glycosuria.*—S. P—, female, æt. 63. Seven weeks' history of ulcer on heel with swelling of left foot. On admission left foot greatly swollen, with a whitish patch on dorsum rather larger than a five-shilling piece. Small ulcer on heel of same foot. Urine 1028, containing sugar and a trace of albumen. Discoloration spread after admission over ankle, and 3rd toe became bluish and swollen. Large bullæ appeared on inner side of hallux, and redness, swelling, and œdema extended up the leg. Evening temperature 100°; amount of urine passed never exceeded 65 oz. in the 24 hours. On 7th day it was noticed that patient had incontinence of urine. No knee-jerks could be obtained. The gangrene was spreading, and some nocturnal delirium had been observed. Patient was very thirsty, and temperature on 6th night had reached 103°. A line of demarcation was observed on dorsum of foot, but death occurred suddenly on 8th day. Patient did not show much improvement on anti-diabetic diet. P.M.—Right popliteal and tibial arteries showed advanced arteriosclerosis. Apical pleural adhesions on left side. No evidence of tubercle in lungs, which were markedly congested. Heart showed left-sided hypertrophy; coronary arteries greatly thickened. Considerable thickening around orifice of mitral valve. Atheroma of great vessels. Other organs normal except pancreas, which was very large and showed intra-acinous proliferation of fat. Pancreatic tissue appeared normal.

5. *Diabetic gangrene of toes; amputation.*—J. M—, male, æt. 65, bailiff's assistant. Family history good. Brothers and sisters all living, father and mother both living; the former aged 80, the latter aged 91. Past history of "rheumatic gout" and influenza some years ago. Extreme thirst noted at times. Six months before admission patient found that his boot rubbed the right hallux. A corn formed in this situation, and 3 weeks before admission the toe became dark in colour. On examination gangrene of right hallux, with discharging wound beneath the metatarso-phalangeal joint. Skin over anterior third of foot red and œdematous. Urine 1038, neutral, slight trace of albumen, sugar 14 grs. to the ounce. Daily excretion about 100 oz. Arteries slightly thickened. Amputation of leg at seat of election by lateral flaps on 4th day. Patient stood

operation well, but two days later urine was found to contain 20 grns. of sugar to the ounce, diacetic acid and acetone were both present, the amount of urine being 66 oz. in 24 hours. On 6th day after operation patient was somewhat light-headed, restless, and had difficulty in breathing. Amount of urine increased to 116 oz., containing 28 grns. of sugar per ounce. No unhealthy condition was observed in the stump. Diabetic coma supervened on 10th day, and death occurred without the return of consciousness 10 days after admission. P.M.—Old apical adhesions in left pleura, with fibrosis on surface of lung. Lungs bulky and oedematous, with broncho-pneumonic consolidation of portions of right upper and lower lobes. Heart healthy, with slight hypertrophy. Arteries slightly thickened, tibial artery above wound thick, but not occluded. Peritoneum healthy, upper portion of small intestine showed hypertrophy, and valvulae conniventes were much enlarged. Old stricture in distal part of appendix. Liver rather fatty; spleen soft and congested. Adrenals pale, but otherwise normal. Kidneys enlarged and congested. Pancreas flabby and unduly pale; its duct was stained by regurgitated bile. No fibrosis was evident, and main branches of coeliac axis were quite pervious, though slightly thickened. Portal vein healthy, atheroma of vessels at base of brain; brain-substance healthy. Pathological report: Pancreas shows some fibrosis of islets of Langerhans, which are numerous in all portions of the gland. Cells appear healthy. Kidneys show slight chronic interstitial nephritis.

6. *Diabetic gangrene of foot, with perforating ulcer.*—T. L., male, æt. 59, asphalter. Treated in hospital for diabetes 1 year ago, and later as out-patient, for paralysis, with wasting of both hands and arms. One week before admission small ulcer noticed beneath left metatarso-phalangeal joint of left little toe. Shortness of breath for 2 days. On admission left foot swollen and purplish in colour. Perforating ulcer leading to head of fifth metatarsal bone. Bullæ present on sole of foot, breathing very rapid and difficult. Face grey in colour, pulse 140, respirations 60. Bronchi heard over both sides of chest, percussion note normal. Urine 1007, no albumen, sugar present in fair amount, some coloration with ferric chloride. Sodium bicarbonate was administered in 30 grn. doses frequently, but death occurred on day of admission. P.M.—Old pleural adhesions found on both sides, most marked at the apices. Lungs congested with basal oedema, and a few calcified nodules. Heart healthy. Kidneys both large, the left one containing in its lower part three roughly encapsuled hæmorrhagic-looking growths each  $\frac{3}{4}$  inch in diameter. Appearance resembled that of angiomasarcoma. Stomach wall contained small fibroma near pylorus, duodenum showed congestion of mucous membrane. Other organs healthy.

7. *Senile gangrene of toes; amputation.*—F. G., male, æt. 58, envelope-cutter. Four months' history of pain and inflammatory swelling of right foot. On admission gangrene of innermost three toes, dorsum of foot red and swollen, lymphangitis in lower part of leg. Patient very feeble and in delirious condition, temperature 102°, pulse 132, radial artery much thickened and tortuous. Lungs showed signs of oedema at bases, heart sounds feeble, urine contained no sugar but a cloud of albumen. Condition improved a little, and amputation through lower third of thigh was performed by circular method on 3rd day. Patient stood operation well, and general condition the following day was much

improved. On 2nd day after operation pulse was not so good, its rate being over 100, and slight delirium was present, together with signs of bronchitis and respirations of 48 per minute. Operation wound suppurated, and discharge was profuse. Lymphangitis extended up to the groin. On 12th day further incisions were made to evacuate pus in the stump, and slight secondary hæmorrhage occurred from the wound the same night. Thigh was again incised four days later as great thickening could be felt on its inner side, but no pus was found. No signs of further infection were manifested, but patient's condition did not improve, and at the end of the third week temperature was 102·6°, pulse 138, and respirations 28, death occurring on the 22nd day. P.M.—Femur and amputation stump appeared healthy. Femoral vein contained softening clot artery healthy. No pleural adhesions and no signs of bronchitis, a patch of old calcified tubercle was present at apex of right lower lobe. Heart was large, with some hypertrophy of left ventricle. Valves competent, slight aortic atheroma; liver fatty; kidneys large and rather pale. A small calculus present in one of left calyces. Spleen large, soft, and diffuent. Brain showed some atrophy of convolutions, with slight subarachnoid œdema.

*Carbuncles.*—Males 8; females 3. Glycosuria 1; glycosuria and albuminuria 1. Neck 6; shoulder 2; back 1; wrist 1; face 1.

*Treatment.*—Incision in all.

*Hæmorrhage after tonsillotomy.*—Male 1; females 2. Died 1.

*Treatment.*—Rest, adrenalin, calcium chloride, intravenous infusion.

*Fatal case. Hæmorrhage after tonsillotomy.*—A. C., female, æt. 7½. Tonsillotomy performed in out-patient theatre on August 23rd. Not much bleeding was noticed at time of operation, but recurrent hæmorrhage occurred the same night and was repeated on August 24th. The child became blanched and was almost delirious. Admitted on August 25th in a hardly conscious condition; extreme pallor was present and temperature was 102°. Decomposing blood-clot was present in naso-pharynx and breath was offensive. Infusion with 1 pint of saline containing 10 mins. of 1 in 1000 adrenalin was performed, and 5 mins. of adrenalin in 1½ oz. of water were given every four hours, but death occurred about 12 hours after admission. Pulse rate on admission was 148 and rose to 160 shortly before death. P.M.—The intestines contained a considerable quantity of partly digested blood. No lesion of any large vessel could be found in mouth or pharynx. The thymus gland was large and weighed 4 oz., showing no sign of softening. Viscera very pale.

## LYMPHATIC SYSTEM.

*Tuberculous adenitis.*—Males 34, females 47. Abscess 8; sinus 5; adenoids and enlarged tonsils 1.

*Treatment.*—Excision 57; scraping 19; nil 5.

*Lymphadenoma.*—Males 4, females 3.

*Treatment.*—Excision 5; for microscopy only 1.



*Elephantiasis lymphaticus.*—Female 1. ? Carcinomatous glands in groin.

*Treatment.*—Nil.

### THYROID.

*Adenoma of thyroid.*—Males 3, females 12. Cystic 5; fibro-adenoma 1.

*Treatment.*—Enucleation of adenomata 12; partial thyroidectomy.

*Cyst of thyroid.*—Male 1. Inflamed.

*Treatment.*—Incision.

*Parenchymatous goitre.*—Males 4, females 6. Died 3.

*Treatment.*—Partial thyroidectomy 7; thyroid extract administered to the remainder.

#### *Fatal cases.*

1. *Parenchymatous goitre; removal of right lobe; suppurative mediastinitis; aspiration pneumonia.*—F. M—, female, æt. 19, single. No other members of family had suffered from goitre. Swelling in neck first noticed 6 years before admission. Gradual increase in size. Some palpitation of heart and dyspnœa on exertion. On admission the enlargement was found to involve chiefly the right lobe. Consistency of swelling was soft, and it extended below the level of the right clavicle. Right lobe excised on day after admission, having typical appearance of parenchymatous goitre with hæmorrhage into its substance; 4 tracheal rings wounded during excision. Temperature after operation 100°, pulse 120. The following morning pulse rate rose to 160 and temperature to 102°; the wound was dressed and further drainage of wound effected. Temperature remained about 103°, respiration became laboured, and patient complained of great thirst. Oxygen, injections of strychnine, and saline *per rectum* caused a temporary improvement. Pulse rate fell to 140 on the second morning after operation; the temperature was then 99·6°, but it rose again during the day; the patient became delirious, and the pulse rose again to 160, and became much weaker. It was still over 130 when patient died on the 3rd morning after operation. P.M.—Body well nourished, suppuration was present in both anterior and posterior mediastina, involving glands, and surrounding connective tissue. Infection appeared to have entered from the peritracheal connective tissue, which exhibited acute inflammation. The tracheal mucous membrane was swollen, softened, and covered with muco-pus, originating from the wound in its wall. The lungs showed broncho-pneumonia, with numerous areas of consolidation. A little semi-purulent fluid was present in both pleuræ. Remaining portion of thyroid was not infected, the left lobe exhibited characters of parenchymatous goitre with one hæmorrhagic cyst. Microscopical report: Parenchymatous goitre, round-celled infiltration well marked, no resemblance to the structure seen in Graves' disease.

2. *Parenchymatous goitre; partial thyroidectomy; suppurative mediastinitis; left empyema.*—W. B—, male, æt. 13. Goitre present for 2 years. Slight dyspnœa after exertion. Occasional tremor of hands. Voice husky during last 12 months. Swelling involved both lobes and isthmus of thyroid. Slight stridor on quiet respiration. Pulse 80 per minute. A fine tremor on holding out both hands.

Eyes normal. Three days after admission right lobe and isthmus were excised by semilunar incision. Tumour found to be closely attached to trachea. Isthmus clamped before excision of right lobe. Wound drained with gauze plug. On the morning after operation temperature rose to  $103.4^{\circ}$ , the pulse rate was 132, respirations 30. The wound was dressed, and temperature fell to  $100.6^{\circ}$  during succeeding 24 hours. Pulse and temperature both remained above normal. On 3rd day after operation patient was greatly troubled with cough, and respirations increased to 44 per minute. During the next 6 days temperature ranged between  $100^{\circ}$  and  $102^{\circ}$ , and signs of left pleural effusion developed. Chest was aspirated and 5 oz. of purulent fluid were withdrawn. This yielded a pure culture of streptococcus. On 12th day after operation 20 c.c. of anti-streptococcus serum were injected, and this dose was repeated daily for 2 days. This produced no effect; temperature rose to  $105^{\circ}$ , and patient died 15 days after operation. P.M.—Wound on right side of neck was suppurating; left half of thyroid presented appearance of parenchymatous goitre. Suppuration had extended from wound in neck into anterior mediastinum. Trachea normal. Left pleura contained 8 oz. of pus. Lower lobe collapsed and covered with plastic lymph. Right lung slightly congested. Bronchial glands enlarged and soft. Other organs normal. Microscopical report: Parenchymatous goitre.

3. *Parenchymatous goitre; excision of right lobe; pyæmia.*—J. B.—, male, æt. 20, harness-maker. Family history negative. Thyroid enlargement present for 6 years. More rapid growth, causing dull, aching pain, during last 4 months. No dyspnoea or dysphagia, and no interference with sleep. Three or 4 people in same neighbourhood similarly affected. On admission there was general enlargement of thyroid, with a hard swelling on palpation in the left lobe. Right lobe was continued across middle line of neck. Operation performed on 6th day after admission, removal of right lobe being effected without difficulty. Wound drained with tube. Temperature gradually rose to  $101^{\circ}$  during succeeding 24 hours, and remained septic in type throughout the rest of life, though patient's general condition did not appear to be bad until the end of the 1st week. Wound in neck discharged purulent fluid, and was treated by irrigation with hydrogen peroxide. Fifteen days after operation blood-culture was taken, and pure growth of a streptococcus was obtained. Successive doses of 30 cc. of antistreptococcus serum were given, on 4 succeeding days, twice daily, but with no good effect. Temperature remained between  $102^{\circ}$  and  $104^{\circ}$ , pulse rate persisted at about 100, and septic diarrhoea made its appearance. Pain and swelling were observed in both shoulders and elbows at the end of 4th week, and patient died 5 weeks after operation. Microscopical report: Parenchymatous goitre; small cysts also present. P.M.—No pus seen in wound of neck. Over right shoulder was a peri-articular abscess, originating in subdeltoid bursa. No communication with operation wound. No suppuration in mediastina. The pleural surfaces of both lungs were covered with extensive deposit of recent plastic lymph. A little sero-purulent fluid in both pleural sacs. Both lungs contained multiple small abscesses, with areas of consolidation. P.M.—Staining well marked in heart and great vessels. Valves healthy. Spleen soft and diffuent.

## OSSEOUS SYSTEM.

**Epiphysitis.**—Males 6; females 2. Died 1. Upper epiphysis of humerus 1; fatal case; lower epiphysis of radius 1; lower epiphysis of femur 2; lower epiphysis of tibia 4. Acute 3; tuberculous 3; syphilitic 1; chronic following acute attack 1. Erysipelas 1 (see Special Table II). Tuberculous dactylitis 1; infective arthritis of knee 1.

**Treatment.**—Incision in all acute cases; gouging in chronic ones; arthrotomy and drainage of knee 1.

**Fatal case. Acute epiphysitis of humerus, upper extremity.**—G. H. P—, male, *æt.* 3 months. History of fall 1 month ago. Perfectly healthy child. Three days before admission some swelling of arm was noticed. This was treated by fomentations but did not diminish, and as child suffered from fever it was brought to hospital. On examination the right arm was swollen from the elbow up to the shoulder-joint; the skin was reddened; no definite fluctuation was felt, the swelling being very hard. Temperature was  $104^{\circ}$ , pulse 160, respirations 56. Incision was made over insertion of deltoid down to the bone, but no pus was found. A further incision over internal condyle also revealed no pus. Temperature fell to  $102^{\circ}$ , but the next day it rose to  $103.8^{\circ}$ , and pulse rate remained rapid. A further incision was made on outer side of arm, and pus was found beneath the periosteum. Wound was drained, medulla not opened. After 2 days temperature, which had been steadily rising, reached  $107^{\circ}$ , pulse rate 176, respirations 112. Death occurred on 6th day. P.M.—Pus was present between periosteum and bone of right humerus, but both medulla and epiphysis appeared healthy. Shoulder- and elbow-joints unaffected. Lungs showed congestion, with some areas of collapse. Other viscera healthy.

**Acute infective osteomyelitis.**—Males 3; females 2. Died 3. Pyæmia 3; septicæmia 1. Femur 2; tibia 3. Infective arthritis of knee 1; suppurative myocarditis 1. Death under anæsthetic 1.

**Treatment.**—Incision and drainage in all. Subsequent gouging in 2. Arthrotomy and drainage of knee 1. Subsequent amputation through thigh 2.

For other cases of diseases of bone see Table I.

**Fatal cases.**

1. **Acute infective osteo-myelitis of femur.**—A. B—, female, *æt.* 10, school. Measles at age of 7. Five days before admission patient attempted to jump over a rope, but fell and twisted her leg. After resting a short time she walked home and went to bed. Pain was present in the leg from time of injury and did not diminish, but became more and more severe. On admission on 6th day of illness patient was only semi-conscious, there was a diffuse swelling over the front of lower half of left femur and the skin over it was red, and the swelling was extremely tender. Deep fluctuation could be obtained. Incision was made through this swelling on day of admission, and a large amount of pus was found beneath the periosteum. Several incisions were made, and the wound was washed out and drained. Two days later, as neither temperature nor pulse, which on admission had been  $104^{\circ}$  and 140 respectively, showed much improvement, the medulla was opened a short distance above lower epiphysis and pus was

found. Further drainage was effected, and 30 c.c. of antistreptococcic serum were administered in the succeeding 48 hours; during this time temperature fell to 99° and pulse rate to 108, but general condition was bad, the child remaining in a semi-conscious state and crying a great deal. Rhonchi could be heard over both lungs and respirations were 40 per minute. Temperature rapidly rose again to 103° and the signs in the chest became more definite, tubular breathing and percussion dullness being present over left upper lobe on 8th day. Wound discharged freely and became cleaner. Labial herpes was observed on 12th day, but the lung condition showed signs of improvement. The opening into medulla of femur was enlarged on 18th day, and both pus and unhealthy granulation tissue were removed. Further injection of serum was carried out, but no good effect was produced, except that temperature remained at a lower level for 2 days. Further drainage of wound on 27th day. Five days later a purpuric eruption was observed over abdomen, the right leg became swollen below knee and the urine contained a quantity of albumen. The purpura lasted a week and at the end of this time general condition improved, the wound was cleaner, appetite was good, and tongue clean, but shortly afterwards small abscesses developed beneath left nipple and patient suffered from diarrhoea. Continuous irrigation of wound was adopted for a few days. In middle of 7th week cough again became very troublesome, and a recurrence of physical signs with tubular breathing and crepitations was observed over base of right lung. Temperature always above 101°. Periarticular abscess of left ankle incised at beginning of 8th week, necrosis of fibula being found. Death occurred 2 days later. P.M.—Disease of femur had been fully exposed and the wound well drained. Right lung was closely adherent to pleura, and the site of disseminated broncho-pneumonia, which had gone on to diffuse gangrene. There was also some broncho-pneumonia in left lung. Other organs healthy.

2. *Acute infective osteomyelitis of tibia.*—E. M. H.—, female, *æt.* 16, servant. Past history of swollen glands in axilla, health otherwise good. Fourteen days before admission sudden onset of pain in right leg. Treated by application of lotion without diminution of pain, which was especially noticed during the day. On admission a weakly-looking girl with painful and swollen leg; the skin was oedematous and red and very tense; the swelling extended from the knee almost to the ankle. The swelling was tense and patient would hardly allow it to be touched. Temperature was 100.2°, pulse 116, respirations 32. Immediate operation was performed, a 5-inch incision being made over inner surface of tibia about the middle of shaft. Periosteum was raised from bone, and between the two was a collection of offensive pus. The medulla was not opened; the wound was drained. No improvement resulted, and after 24 hours temperature was 101.8°, pulse rate 128. For 7 days temperature varied between 99° and 102°, rising on 7th day to 103.6°. The wound was then reopened and the medulla exposed, pus being found in the medullary canal. An abscess was also drained in deep muscles of leg. Further incisions were made on 19th day, the upper tibial epiphysis was found to be loose, but the knee-joint was found to be unaffected. Two days later pus was found in the knee-joint and amputation was decided upon. The leg was taken off by circular amputation through middle of thigh. Temperature remained high, reaching 106.4° three days after amputation. Pulse

was then 172. High fever persisted for 6 days, and although stump was fairly healthy general condition showed no improvement, and death occurred on 31st day. P.M.—Medulla of femur found to contain pus; bone protruding through wound. Heart and pericardium normal. At both apices old calcified tubercle. A similar deposit found in bronchial glands. Liver large and rather fatty. Other organs healthy.

3. *Acute infective osteomyelitis of tibia.*—A. F.—, male, *et.* 6. No definite history obtainable. Painful swelling present over lower end of left tibia and fibula, with general delirious condition. Skin over swelling was oedematous and tender on pressure; it was not red and no fluctuation was detected. No enlargement of inguinal glands was found. Temperature was 104°, pulse 130. Some history of retching was given, but child had not vomited. Mother was the subject of phthisis. Patient was taken up to the theatre, but death occurred under the anæsthetic, which was chloroform. P.M.—Inquest. Multiple abscesses in myocardium.

4. *Necrosis of jaw; alveolar abscess; septic broncho-pneumonia.*—J. W. C.—, male, *et.* 15, school. Toothache in first left lower molar on August 29th, 1905. This continued and swelling of face appeared. The molar was extracted, but the swelling did not subside. Admitted on September 4th with great swelling on left side of face and oedema of eyelids. Pus exuded from socket of extracted molar on pressure over swelling. Temperature 103.2°. Incision was made on second day, but no pus was reached. Temperature remained high and two days later there were signs of pleuro-pneumonia on both sides. Temperature rose steadily, reaching 105° on 4th day; pulse 160, respirations 72. Death, with increasing difficulty in respirations, on 5th day. P.M.—Alveolar margin of lower jaw showed small area of bare bone adjacent to socket of first molar. Oedema all over left side of face. Internal jugular vein on left side was thrombosed, the clot being very recent. Upper air-passages normal. Both pleuræ showed recent inflammation, with considerable amount of lymph on right side. Intense septic broncho-pneumonia was present in left lower lobe and right middle and lower lobes. Bronchial glands enlarged and soft. Other organs showed cloudy swelling.

*Separation of tibial tubercle.*—Males 2. History of injury in both cases. Necrotic separation.

*Treatment.*—Removal of separated portion in both. See 'Lancet,' July 22nd, 1905.

#### ARTICULAR SYSTEM.

*Shoulder; tuberculous arthritis.*—Female 1.

*Treatment.*—Nil.

*Shoulder; ankylosis.*—Male 1. After excision.

*Treatment.*—Nil.

*Elbow; tuberculous arthritis.*—Males 6, females 2. Readmission 1.

*Treatment.*—Excision 1; arthrectomy 1; drainage of peri-articular abscess 4.

*Gonorrhæal arthritis.*—Female 1.

*Treatment.*—Exploratory incision; massage.

*Ankylosis.*—Males 3, female 1. All following injury.

*Treatment.*—Excision 3; mercurial inunction 1.

*Wrist; ankylosis.*—Female 1. Fibrous, after cellulitis.

*Treatment.*—Massage.

*Sacro-iliac disease.*—Females 2. Died 1. Tuberculous meningitis.

*Treatment.*—Arthrotomy and drainage in both cases.

*Fatal case. Sacro-iliac disease; tuberculous meningitis.*—E. P—, female, æt. 43. One brother died of phthisis. Rest of family healthy. Previous history good. Pain first observed in right buttock 18 months before admission. Nine months later a swelling was first noticed in this situation, and its size had increased slowly. No pain on walking, but tenderness on pressure. On examination a rounded swelling with indefinite edge was present over left sacro-iliac synchondrosis. Fluctuation easily obtained, swelling not adherent to skin. Movements of leg normal. Circular depression with bony edge felt on palpation over upper part of joint. Urine normal. Abscess incised, scraped, washed out, and drained on 7th day. Very extensive destruction of both sacrum and ilium were found, and several small sequestra were removed. Discharge from wound was free, and convalescence was uneventful for 3 weeks, at the end of which time temperature rose gradually to 102°, and persisted between 100° and 102° for 10 days. No physical signs could be found in chest or abdomen to account for this fever, and the wound appeared to be draining well. At the beginning of 7th week, when patient had been drowsy for 2 days and the pulse had been noticeably weaker, there was sudden paresis of muscles on left side of face accompanied by irregular movements of right arm. Patient gradually became unconscious. No vomiting occurred, pulse rate was 100. Optic discs showed no evidence of neuritis, and urine was healthy, though 2 days later patient, who remained in a drowsy state, had retention. Death occurred in middle of 7th week. P.M.—Meninges over base of brain and vessels in Sylvian fissures were studded with small, grey, miliary tubercles. Membranes in circle of Willis much thickened. Excess of cerebro-spinal fluid, but no fibrinous exudation. Ventricles distended with fluid. Lungs showed old pigmented scars at both apices. One calcified bronchial gland. Kidneys granular. Sacrum displaced forwards at right sacro-iliac joint. Diseased bone for the most part removed, though 2 small areas of bare bone were still present on ilium. Pathological report: Nodules in meninges showed epithelioid cells and lymphocytes, together with numerous tubercle bacilli.

*Hip.*—*Tuberculous arthritis.*—Males 37, females 22. Readmission 8. Abscess 16; sinus 15; abscess and sinus 3; ankylosis 3; abscess of leg 1; tuberculous knee 1; necrosis of mandible 1; bilateral 3; caries sicca 1; previous Furneaux Jordan 3; lardaceous disease 1.

*Treatment.*—Excision by anterior incision 3; by posterior incision 1; by external  $\cap$ -shaped flap 1; arthrectomy 3 (by  $\cap$ -shaped flap 1); erosion 1; incision of periarticular abscess and sinus 33; amputation at hip-joint (Furneaux

Jordan in 2 stages in both) 2; tenotomy of adductor longus 1; excision of knee for tuberculous arthritis 1; the remainder treated by rest, extension, or splints.

*Hip.*—*Subacute infective arthritis.*—Males 2.

*Treatment.*—Extension 1; hot air baths.

*Osteo-arthritis.*—Male 1, female 1. Also ankle and wrists 1.

*Treatment.*—Hot air baths.

*Nemopathy.*—Male 1; knee also affected. Tabetic.

*Treatment.*—Rest and leather splint.

*Coxalgia.*—Males 3.

*Treatment.*—Rest. Examination under anæsthetic 1.

*Ankylosis.*—Males 2, females 3. After tuberculous arthritis 4; bilateral bony ankylosis after infective arthritis.

*Treatment.*—Osteotomy of femoral neck 1; subtrochanteric osteotomy 2; trochanteric osteotomy and formation of false joint 1; *nil* 1.

*Knee.*—*Tuberculous arthritis.*—Males 29, females 16. Readmissions 10. Ankylosis 1; tuberculous wrists and elbow 1; tuberculous glands of neck 1; fractured femur 1.

*Treatment.*—Excision 10; arthrectomy 4; erosion 1; amputation through lower third of thigh 8; after-arthrectomy 1; arthrotomy 2; incision of peri-articular abscess and sinus 13. The remainder treated by extension and splints.

*Knee.*—*Acute infective arthritis.*—Male 1. Died. Pyæmia.

*Treatment.*—Incision and drainage, peri-articular.

*Acute infective arthritis of knee; pyæmia.*—E. W—, male, æt. 13, school. Previous history good. Two weeks before admission a wound was observed on dorsum of right foot. A week later patient fainted, although he had not previously appeared ill. From this time onward he complained of severe headache. Admitted January 12th, 1905, looking very ill; tongue dry and furred, temperature 101°, bowels constipated. Small ulcer present on dorsum of right foot. Running up from it on anterior surface of leg was well-marked lymphangitis, with area of cellulitis over head of tibia and acutely tender swelling on either side of ligamentum patellæ. Swelling, redness, and tenderness also present around metatarso-phalangeal joint of left hallux. On day of admission incisions were made through skin over head of tibia, knee-joint, and left toe but no pus was reached. Local condition showed some improvement, but patient's general condition was worse, and delirium was present at times. On January 14th there were well-marked signs of pleural friction in right axilla. Temperature rose to 105° at mid-day on January 15th, and pulse was 170; respirations 48. Death. P.M.—Small collection of pus in left great toe joint. Right knee contained large amount of thick pus; no bony lesion in femur or tibia. Pericardium contained  $\frac{1}{2}$  pint of purulent fluid. Recent plastic exudation in right pleura. Lungs, both sides, showed pyæmic abscesses. Necrotic area in heart-muscle close to mitral valve. No valvular lesions. Microscopically these lesions appeared to contain streptococci.

*Knee synovitis.*—Males 4; female 1. Subacute 2; bilateral 1.

*Treatment.*—Rest in all.

*Gonorrhæal arthritis.*—Males 2. Bilateral in both cases.

*Treatment.*—Rest and massage.

*Syphilitic arthritis.*—Male 1; female 1. Congenital syphilis 1.

*Treatment.*—Medicinal.

*Ankylosis.*—Males 3, females 4. Bony ankylosis after excision 3; fibrous 4. Congenital syphilis 1. Erysipelas 1. See Special Table II.

*Treatment.*—Excision 4; wrenching and massage 2; *nil* 1.

*Dislocation of semilunar cartilage.*—Males 9; female 1. All internal. Cartilage lacerated in 3; recurrent hæmorrhage 1. Post-operative septic arthritis 1.

*Treatment.*—Excision 8; exploratory incision and reduction 1; subsequent arthrotomy and lavage 1; subsequent arthrotomy and drainage followed by amputation through middle of thigh 1; *nil* 1.

*Loose bodies in knee.*—Males 3; female 1. Fringe bodies in 3; "calcified myeloma" 1.

*Treatment.*—Excision.

*"Internal derangement" of knee-joint.*—Males 4; female 1. Nipped synovial fringe 1; ? dislocated internal semilunar cartilage 2; ? external 1.

*Treatment.*—Excision of fringe 1; exploratory arthrotomy 1; rest and exercises for the remainder.

*Nemopathic arthritis of knee.*—Females 1; tabetic.

*Treatment.*—Rest.

## NERVOUS SYSTEM.

*Trigeminal neuralgia.*—Males 3; females 4.

*Treatment.*—Excision of 2nd and 3rd roots of 5th nerve by Hartley Krause route 1; supra-orbital neurotomy 1; exploration of maxillary antrum 2; exploration of frontal sinus 1; the remainder treated medicinally.

*Facial paralysis.*—Male 1. After removal of parotid tumour.

*Treatment.*—Nerve-anastomosis.

*Facial paralysis; facio-hypoglossal, hypoglossal-lingual, anastomoses.*—D. P—, male, æt. 37, tram-driver. Twenty-one months before admission a tumour of the right parotid gland was removed. Complete facial paralysis was observed on the day after operation. For 6 months before admission patient had suffered from exposure conjunctivitis, with slight ulceration. On examination the facial paralysis was complete and the right facial muscles were wasted. Right-sided epiphora. On 7th day an incision was made in front of right pinna and carried down anterior border of sterno-mastoid. The distal end of the facial nerve was found surrounded by scar-tissue, and stimulation of it by interrupted current produced contraction of face-muscles. The hypoglossal was exposed, hooking round the occipital artery, and was divided. Its proximal end was then sutured with fine silk to the exposed distal end of the facial nerve, and after the lingual nerve had been exposed beneath the submaxillary gland it was divided,



and its proximal end was stitched with two fine silk sutures to the distal end of the hypoglossal. The nerves were divided, so that suturing could be effected without tension. The wound was closed, except at its lower extremity. Five days later there was obvious hemiatrophy of right side of tongue, which, when protruded, passed over to paralysed side; no power in face-muscles, no power of differentiating between taste of quinine, sugar, and salt. Wound healed normally. From 10th day daily faradisation of the right facial muscles was carried out for five minutes; no contraction was obtained. Microscopical report on portion of facial nerve removed for examination was to the effect that nerve showed fibrosis. Patient was discharged at end of 6th week, when faradisation produced slight movement in right side of lower lip, and right lower eyelid appeared to hang down less than before operation. No alteration in hemiatrophy of right half of tongue.

*Tuberculous meningitis.*—Females 1; died. History of fall on head.

*Treatment.*—Trephining and exploration of dura.

*Head injury; tuberculous meningitis.*—I. J—, female, æt. 4½. Family and past history good. A few hours before admission patient fell down a flight of 12 stone steps, alighting on head over right motor area. She did not seem to be hurt very much and walked about for 20 minutes afterwards, telling her father what had happened. At the end of this time she complained of giddiness and felt drowsy. On the way to hospital it was noticed that the left arm and leg showed spasmodic movements, and there was twitching of left side of face. On admission this convulsive movement on left side of the body was well marked, and there was conjugate deviation of the head and eyes to the right. The pupils were equal and reacted to light. Knee-jerks present and equal. Child was profoundly unconscious. A short time later the pupils were observed to be unequal, the right being the larger, and light reflex was absent. Pulse rate increased in a few minutes from 130 to 170, temperature 96·6°. Twitching of limbs persisted and immediate operation was decided upon, a trephine being applied over right motor area. The bone was normal, and the dura, which appeared healthy, was opened, revealing slight bulging of brain-substance. No hæmorrhage was found. After the operation the convulsive movements on left side gradually disappeared, and on complete recovery from the anæsthetic child was perfectly conscious and able to recognise people; she sat up in bed and asked for milk. Temperature rose shortly after operation to 101·4°, but soon became subnormal and remained about 97° for 5 days. Stitches were removed on 8th day, when temperature had risen to 102·2°, the child having been apparently well for the week following operation. Wound was healthy, but a small abscess was discovered on left leg. Some enlarged glands were present on both sides of neck, due to pediculi capitis. Temperature continued to rise in evening to between 101° and 102°. Discs apparently normal. Urine healthy. On 22nd day, when temperature was 100·8°, pulse 120, respiration 20, patient vomited once. This was repeated several times the next day, and the child complained of headache in left temporal region and exhibited drowsiness. The right pupil was smaller than left, though both reacted to light. Coma gradually supervened. Some bulging at site of trephine opening was present; pulsation still felt. Knee-jerks normal; Babinaki's sign obtained on right side. No squint or paralysis of cranial

nerves. A rigor occurred on 30th day, but for about 10 days child remained in a comatose condition, death taking place on 33rd day. P.M.—Body well nourished. A little clear fluid was present in the subarachnoid space of cord. The cerebellum was glued to the surface of fourth ventricle. A few tubercles were seen on convexity of cerebrum, but none at the site of operation, which was about the centre of the right Rolandic area. The dura here was healthy. The base of brain showed well-marked tuberculous meningitis, with yellow gelatinous exudation. Tubercles were present over the whole basal arachnoid. Similar tubercles were scattered over membranes of spinal cord. Ventricles moderately distended with serous fluid. The brain contained no tuberculous masses. Bronchial glands large and caseous. Lungs normal, with tubercles on visceral pleura. Mesenteric glands free from tubercles. No ulceration of stomach or intestines. Spleen showed a few tubercles on its peritoneal coat, and a small caseous mass was found in its substance. Other organs healthy.

*Intra-cranial tumour.* Male 1, female 1. Died 1.

*Treatment.*—Exploration of cerebrum and drainage of lateral ventricle 1; trephining 1.

*Fatal case. Intra-cranial tumour; hernia cerebri; pyocephalus.*—S. L.—, male, æt. 23, carman. Family history good. Past history: 9 years before admission "low fever." Six months before admission laid up with thrombosis of vein in left leg. Ill for 3 months. No history of alcohol or venereal disease. Admitted on January 28th, 1905, with history of onset of headache on December 10th, 1904. A few days later vomiting set in and the headache became worse, at first frontal, then vertical, and finally occipital, accompanied by pain in neck. Worse at night, and when head was lowered. Vomiting irregular, the vomit consisting of stomach contents containing no blood. No fits, no dysphagia, insomnia troublesome. There was no history of injury. On admission patient was anæmic and mentally depressed. No lesion of skull bones could be found, and there was no evidence of otorrhœa. Movements of head good, though there was considerable tenderness on palpation over lower occipital region. This was present also over upper cervical spine. Optic neuritis was present on right side only. Left eye normal. Other cranial nerves healthy. Pulse 60, respirations 12. No wasting of muscles. Sensation normal. Knee-jerks brisk and equal. Urine contained a trace of albumen, tongue furred, bowels constipated. Abdominal and thoracic organs healthy. While under observation patient became drowsy and apathetic. The pain persisted, but no definite focal symptoms developed, though both knee-jerks became diminished. Vomiting occurred at irregular intervals, and on 20th day there were signs of implication of 8th cranial nerve, a watch being heard only 1 inch from right ear; on the left side it could be heard  $4\frac{1}{2}$  inches from external meatus. The left knee-jerk was abolished, and the right obtained with great difficulty. Patient answered questions fairly well, but was not quite *compos mentis*. Lumbar puncture was performed, and 2 oz. of clear fluid were withdrawn. After this patient became somewhat light-headed. On February 17th a portion of the left parietal bone was removed, but no lesion was discovered and the dura appeared normal. This was opened a week later, and the brain explored with negative result. The wound was closed. Operation made little difference in patient's condition except

that some weakness was observed on right side of face, and for a time the right leg was weak. Mental condition was very little altered. The wound did not remain healthy, and on March 27th there was a well-developed hernia cerebri, with superficial suppuration. Patient was discharged in this condition, but was readmitted on June 26th, when the wound was healed except for a small area; movements of the right arm and leg were not as well performed as those of the left limbs, patient was more drowsy and his speech was limited to "yes" and "no." Left disc showed optic atrophy. On July 5th the wound was reopened, and the cerebrum was again explored, but no sign of tumour could be found. The left lateral ventricle was drained. A rigor occurred on July 9th, patient having vomited frequently for 2 days after operation. On July 10th vomiting was repeated, and patient became extremely restless, complaining of severe headache. Pulse 108, temperature 103°, respirations 20. Abundant fluid discharge from wound. Vomiting occurred at irregular intervals during the next week, and the discharge from wound became purulent. After 3 weeks' intermission the vomiting recurred, usually being observed once a day. The wound healed slowly, a fluid swelling remaining beneath the skin-flap. On August 4th slight convulsive movements of left arm and left side of face were observed, and for a month patient had been unable to speak. From this time there was steady deterioration, temperature showed occasional elevation, pulse rate remained about 100 and respirations 20, and on March 22nd temperature suddenly rose to 106°, and death occurred rather suddenly. P.M.—The scalp was adherent to the hernia cerebri, and on removal of its covering a large quantity of clear fluid escaped containing gelatinous yellow flakes. The fluid sac was a prolongation from left lateral ventricle. The right ventricle was slightly distended, and pus was present in all the ventricular cavities. Left frontal and parietal cortex was softened and herniated. No tumour could be discovered in cerebrum or cerebellum and none was found at base of skull. Viscera showed very little change.

*Hydrocephalus*.—Male 1; female 1. Died 1.

*Treatment*.—Mastoid antrotomy, with drainage of lateral ventricle through anterior fontanelle 1; *nil* 1.

*Hydrocephalus*.—D. L. M. E—, female, *æ*t. 5 months. Family history good, no other children. Child healthy until 6 weeks before admission, when she refused to take her food. Gradual wasting noticed, no discharge from ears. Comatose condition for some days before admission. On examination patient was quite unresponsive to painful stimuli. *Edema* was present over right mastoid region. Temperature 98°, pulse about 160, respirations of Cheyne-Stokes type. Right mastoid region explored on day of admission. No disease found in this situation; lateral ventricle punctured through anterior fontanelle. Slight response to external stimuli was shown after operation, but feeding had to be carried out by means of nasal tube, and urine was withdrawn by catheter. Temperature after operation rose to 101.4°. Pulse rate remained over 160. Patient rapidly relapsed into absolute unconsciousness, and on 4th day temperature became subnormal, going as low as 96.4°. The right lateral ventricle was again aspirated, and a test-tube full of yellow fluid was withdrawn. No improvement took place, and death occurred on 7th day. Examination of brain

after death revealed condition of pycephalus. Pathological report: Films from fluid showed numerous minute cocci and diplococci, both Gram-negative. Only 1 or 2 cells seen, and these were phagocytes. Cultures all sterile.

### RESPIRATORY SYSTEM.

*Empyema of antrum.*—Males 6; females 9. Readmissions 2. Also nasal polypi 2.

*Treatment.*—Drainage into inferior meatus of nose 10 (2 operations on 1 case); drainage into mouth 6. Also inferior turbinectomy 1; removal of polypi 2; exploration of frontal sinus 1.

*Empyema of frontal sinus.*—Male 1; discharging.

*Treatment.*—Nil.

*Caries of ethmoidal cells.*—Female 1.

*Treatment.*—Curettage.

#### *Fatal cases.*

1. *Broncho-pneumonia; bilateral pleural effusion; otitis media suppurativa.*—A. S—, male, æt. 2 years 7 months. Measles 2 months before admission, followed by otorrhœa, persisting until admission; 48 hours' history of drowsiness and pain. Apparent tenderness over right mastoid. Examination of chest revealed signs of consolidation in both lower lobes, with crepitations and harsh breath-sounds. Respirations 52 per minute, pulse rate 156. Temperature 6 hours after admission 104°. Temperature remained high for 3 days, and pulse rate was persistently over 140, respirations varying between 48 and 60. No improvement was observed in spite of stimulants, tepid sponging, and local applications to chest. Death on 4th day. P.M.—Recent fibrinous pleurisy on both sides, with a turbid exudate of some 4 oz. Intense inflammation of pleura. Numerous areas of breaking-down broncho-pneumonia scattered throughout lungs. Other organs healthy. No disease of mastoid cells found.

2. *Pyopneumothorax.*—O. H. W—, male, æt. 33, florist. Three weeks before admission patient, who had always previously been healthy, had an attack of left-sided pneumonia. A diagnosis of empyema was made at the end of this period, as pneumonia did not resolve. Chest was aspirated by medical attendant, and this operation caused respirations to become very rapid, and there was marked collapse. Patient was, therefore, admitted to hospital, when he was found to have a left pyopneumo-thorax. General condition bad, therefore only a local anæsthetic was used and a portion of 10th rib was excised in posterior axillary line. The chest-wall was gangrenous, and incision of the pleura caused escape of gas and pus of very offensive nature. Temperature was 101·4°, pulse 140, respirations 60. The amount of discharge was abundant, and its odour was very offensive. Left side of chest was hyper-resonant in front, dull posteriorly. Breath-sounds tubular. Heart displaced to right of sternum. Shortly after admission septic diarrhœa made its appearance, the gangrene of chest-wall spread, respirations became very hurried and feeble, and death occurred on 3rd day with temperature of only 96°. P.M.—Left pleura contained some ounces of creamy foul-smelling pus, and the lung was tied by adhesions of old standing to

the pericardium, diaphragm, and chest-wall. Pleural cavity was more or less loculated, but the loculi communicated. No rupture of the lung could be found, and no definite pneumothorax under tension was present. Obsolete phthisis at left upper lobe; the rest of lung was retracted, semi-solid, and airless. Bronchial glands healthy; right lung oedematous. Heart normal, pericardium thickened externally, where it was adjacent to the left empyema. Other organs healthy.

#### AUDITORY SYSTEM.

*Otitis media suppurativa, mastoiditis, acute, subacute.*—Males 27, females 11. Facial paralysis 1. Erysipelas 1; scarlet fever 1 (see special abstracts); subacute 3.

*Treatment.*—Antrotomy 25; complete mastoid operation 2; complete mastoid operation, in two stages, with Thiersch grafting 7; complete mastoid operation and ligation of internal jugular vein 1; antrotomy and plugging of lateral sinus 1. Irrigation in the remainder.

*Otitis media suppurativa; mastoiditis, chronic.*—Males 52; females 95. Died 1.

*Treatment.*—Complete mastoid operation with Thiersch grafting on both sides, in two stages, 14; on one side 58; complete operation without grafting 5; sequestrum removed in 1 case; closure of post-aural opening 11; curetting and Thiersch grafting 4; curetting without grafting 2; tonsillotomy and curettage of adenoids 1; curettage of adenoids 1; incision of mastoid abscess 1; antrotomy, with drainage of lateral ventricle, 1; snaring of aural polypi 1; irrigation and dressings 6; nil 8.

*Fatal case. Otitis media suppurativa; mastoiditis; tuberculous meningitis; mastoid operation, with drainage of lateral ventricle.*—E. P., female, æt. 2 years 11 months. Otorrhœa 12 months before admission, bilateral. Ceased several months ago and recurred during the last 15 days. On admission: Unhealthy child, very lethargic, discharge from both ears, with tenderness on pressure over left mastoid. Left pupil dilated, light reflex absent. Ptosis on this side, with some weakness also of the left limbs. Operation on day of admission; antrum full of pus, mastoid cells cleared away and dura exposed. Dura incised and left temporo-sphenoidal lobe explored. Discharge of cerebro-spinal fluid under considerable pressure from this lateral ventricle. Drainage effected. Temperature after operation 100°; pulse 130; respirations of Cheyne Stokes type, and death within 12 hours. P.M.—Cervical cord showed leptomeningeal thickening over cervical enlargement. No tubercles noticed here. Dura and sinuses of cerebrum showed no disease. No suppuration at site of operation. Base of brain showed numerous miliary tubercles. A few tubercles scattered over convex surface. Ventricular system distended with fluid; communications with subthecal space not obstructed. No abscess or caseous masses in brain. Bronchial glands caseous. Caseous deposit at apex of right lung with pleural adhesion. Heart healthy, peritonæum healthy, with small tubercles on coverings of liver and spleen. Other organs healthy. Cultures from meninges negative.

*Otitis media suppurativa; mastoiditis, with complications.*—Males 10,

females 6. Died 7. Perisinus suppuration 5; meningitis serosa 1; lateral sinus thrombosis 3; extradural abscess 1; temporo-sphenoidal abscess 4; cerebellar abscess 2. Transferred to Medical side 1; meningitis serosa.

*Treatment.*—Antrotomy and free drainage 14; previous complete mastoid operation with Thiersch grafting 1; previous paracentesis tympani 1; drainage of temporo-sphenoidal abscess 3; drainage of cerebellar abscess 1; drainage of extra-dural abscess 1; ligature of internal jugular vein in neck 4; removal of clot and plugging of lateral sinus 2; exploration of brain 2; Thiersch grafting after complete mastoid operation 1.

*Otitis media suppurativa; acute mastoiditis with perisinus suppuration.*—G. A—, female, *set.* 14. Otorrhoea present on right side for 5 years. No history of specific fever, but the ear discharge commenced shortly after operation for removal of adenoids. Five days before admission the child became feverish and drowsy. She complained of great headache and pain referred down the spine. Some bleeding was observed from external auditory meatus and nose on right side. Nocturnal delirium on day before admission. On examination patient was very pale and drowsy, and could be roused to answer questions only with difficulty. Redness and tenderness present over right mastoid process; external auditory meatus filled with granulations and offensive discharge. Respirations rapid and shallow. Tongue dirty, pupils dilated, equal, and reacting to light. knee-jerks normal. Temperature  $100.2^{\circ}$ ; pulse 72, on admission. The former increased to  $103^{\circ}$  and the latter to 88 within 6 hours of admission. Operation was then performed; the mastoid antrum was found full of offensive pus, and this was also present in the lateral sinus groove. The sinus itself was pulsating normally. Complete mastoid operation was performed, and the wound was left open. The following morning temperature was normal, pulse rate 60, and patient was much less drowsy, though for 5 days the temperature remained subnormal and the pulse was not above 60, and patient's general condition remained good, and the wound was sufficiently clean to be grafted on the 14th day. Patient was discharged at the end of 4th week, with slight improvement in hearing and very little discharge from meatus.

*Otitis media suppurativa; acute mastoiditis, with perisinus suppuration.*—C. J—, male, *set.* 13, school. No history of specific fever except mumps at age of 7. Ten days before admission patient had a sore throat, and pain in left ear was observed five days later, and this continued up to day of admission. No discharge from meatus. On examination no swelling or tenderness over mastoid process, though there was some tenderness over upper part of sterno-mastoid. Temperature  $102.4^{\circ}$ , pulse 104, respirations 20. Examination of ear revealed a healthy meatus, while membrane was inflamed and bulging outwards. No perforation. Paracentesis was performed and pus flowed out readily. Irrigation with 1 in 60 carbolic was performed and hot dressings were applied. This caused a fall of temperature to  $98.8^{\circ}$  and the pulse rate became 92, but the pain was only partially relieved, and temperature during the next five days gradually rose, and reached  $103^{\circ}$  on the 8th day, the pulse being 84. Further operation was performed, and pus was found in the antrum and mastoid cells, and also in the sinus groove. The temperature showed irregularity during the next five days, occasionally falling to  $97^{\circ}$  and then rising to  $102^{\circ}$ . At the end of this time it

became normal and the child made an uninterrupted recovery. Discharged on 30th day.

*Otitis media suppurativa; acute mastoiditis, with perisinus suppuration.*—G. L. W—, male, *et.* 7, school. Measles 3 years ago, scarlet fever three months before admission, followed shortly afterwards by discharge from right ear. Swelling over right mastoid observed 14 days before admission. Gradual increase in size, with pain. On examination purulent discharge from right meatus. Diffuse fluctuating swelling over mastoid process, which was tender. Temperature 99°, pulse 110. Pus was found directly beneath skin and a small aperture leading into the mastoid antrum, which was a large cavity filled with pus. The mastoid cells were also filled with pus, which extended into the sinus groove. Wound left open. Temperature in 48 hours was normal and on 4th day became subnormal and remained so for a week. General condition of child was excellent and the wound healed fairly rapidly. Temperature during convalescence was never above normal. The patient was discharged on 33rd day.

*Otitis media suppurativa; acute mastoiditis, with perisinus suppuration.*—E. C—, female, *et.* 5. Measles 2 years ago, pain in left ear ever since. Otorrhoea one month. Swelling over left mastoid process 2 days. This was obviously an inflammatory swelling and there was abundant offensive yellow discharge from the left meatus. Temperature 97·6°, pulse 120, respirations 24. The antrum and mastoid cells were fully opened up and found to exhibit gross disease. There was suppuration around the lateral sinus and the dura was exposed above the antrum, where it was covered with granulations. The wound was left open, and after-treatment consisted of daily irrigation with hydrogen peroxide and plugging. Progress uneventful. Discharged at end of 4th week.

*Otitis media suppurativa; acute mastoiditis, with perisinus suppuration.*—A. C—, male, *et.* 6. Measles 15 months before admission. Headache six days before admission, with severe pain in left ear. No discharge from either ear had been noticed. On admission a large suppurating swelling was found over left mastoid process, and there was some oedema beneath the left eyelid. Right disc normal. Temperature 99·4°, pulse 88. Incision of the skin caused free escape of pus and the antrum was found to occupy a superficial position; the mastoid was fully opened up and pus found in the sinus groove. The wound was left open. Twenty-four hours later there was a rise of temperature to 102·2° and pulse rate was 112. Daily irrigation with hydrogen peroxide was carried out, and, with the exception of further rise of temperature on the 4th day and again at the end of 10 days, patient made an uninterrupted recovery.

*Otitis media suppurativa; acute mastoiditis; extradural abscess.*—C. A—, male, *et.* 53, labourer. Measles and smallpox during childhood. 13 weeks before admission an attack of influenza, causing headache and persistent deafness in both ears. The deafness on right side passed off, but on the left side this continued, and 4 weeks before admission it increased, and discharge made its appearance. Shortly before admission pain became very acute. On examination a puffy oedematous swelling was seen over left mastoid, where marked tenderness was present. Temperature 98°, pulse 72, respirations 30.

Operation revealed an aperture in the mastoid process through which pus was oozing. The cells were full of pus and were chiselled away. The antrum was opened up and the incision carried backwards to expose the bone around the sigmoid sinus. The tegmen antri was wanting, and the dura was covered with pus and granulation which extended around the upper part of lateral sinus. The wound was left open. Temperature rose slightly after operation but reached normal 24 hours later; the pulse rate was 76. Examination of discs revealed slight swelling, most marked on right side. Patient made an uneventful recovery, although temperature and pulse showed a tendency to remain sub-normal for three weeks. At the end of this time there was very little discharge and the patient went out on the 26th day.

*Otitis media suppurativa; acute mastoiditis, with perisinus suppuration and temporo-sphenoidal abscess.*—J. C. E—, male, *et.* 11, school. Measles at age of 4, scarlet fever 2 years later. Otorrhoea ever since the latter fever. 14 days before admission the discharge ceased and patient experienced acute pain in left ear. On admission slight discharge was observed from left meatus and there was well-marked tenderness over mastoid process, with redness and oedema. Temperature 100°, pulse 98, respirations 20. The antrum was opened up and found to be full of pus communicating with a large abscess which was found superficial to the mastoid process. The disease was found to extend to the bone around the lateral sinus and there was pus in the groove. The dura over the roof of the antrum was exposed, and both it and the lateral sinus were covered with unhealthy granulations. These were gently removed, together with some dead bone in the neighbourhood of the petro-mastoid suture. The cavity was irrigated with 1 in 60 carbolic and plugged lightly with gauze; 12 hours later the temperature was 98·2°, pulse 110, but the temperature rose during the day and the following morning it was still 100°, the pulse having fallen to 80. The wound was irrigated with dilute carbolic and the discharge was abundant. Condition remained fairly good until 7th day, when temperature fell rather suddenly to 97°. Pulse rate was only 68 and the patient complained of headache and pain at back of eyes. Pupils and knee jerks both normal. Temperature and pulse both remained subnormal during next week, though the patient complained of little more than headache. On 11th day examination of the fundi revealed marked swelling of both discs, with blurring of their margins and engorgement of their vessels. On the temporal side of left disc a small hæmorrhage was observed. No localising signs were manifested, pupils remained normal, and smell was unaffected, but exploration of the wound was undertaken and bulging of the exposed dura was found through the roof of the antrum. The dura was incised but no subdural abscess was found. A trocar was then passed into the left temporo-sphenoidal lobe and about 1 oz. of very offensive pus was withdrawn. Two small rubber drainage-tubes were inserted and the wound left open. Very shortly afterwards the temperature was normal and the pulse rate rose to 116. Patient on the next day seemed better, but cried out frequently and complained of pain in the neck and between the shoulders. The abscess cavity was gently irrigated with saline. Temperature remained for about a week a little below normal, but the pulse rate was 70 or a little more, and the general condition of patient improved greatly. One drainage-tube was removed on 4th day, and the



second 2 days later, when the wound was occupied by a hernia cerebri exhibiting slight pulsation and yielding an offensive discharge from its surface, but none from the track of the tubes. Irrigation of the wound was then carried out with hydrogen peroxide. Slight right-sided facial weakness was observed 1 day after drainage of abscess but it persisted for only 6 days. Further examination of discs revealed optic neuritis but no more hæmorrhages. The hernia cerebri sloughed away slowly and no permanent nervous symptoms were manifested. Three weeks after drainage of temporo-sphenoidal abscess the discs were less swollen and the edges more defined. A fortnight later they showed very little swelling, and what still remained was most marked on the left side. The wound closed slowly by granulation, and the patient's general condition became excellent. Sight for both near and distant vision was normal and the boy was discharged in the 11th week, with the wound practically closed. Bacteriological report on cerebral abscess: Aerobic culture sterile at end of 7 days; films of pus showed numerous polynuclear phagocytes, with cocci and Gram-negative diplococci.

*Chronic otitis media suppurativa; meningitis serosa.*—I. B—, female, æt. 8. Bilateral otorrhœa for more than 7 years. Patient was admitted on February 14th with a history of having fallen on to her hands and knees, when she was observed to be in a drowsy condition. This fall occurred on the day of admission, and the child had complained of slight headache previously. The fall was attributed to vertigo. On examination, temperature 98°, pulse 100, respirations 24. The pupils were equal and reacted to light. Knee-jerks present and equal. The child was slightly drowsy, but exhibited no retraction of the head. No œdema or tenderness over the mastoid processes was observed, and no pain on pressure over jugular vein in neck. There was a purulent discharge from both ears. Kernig's sign absent. The following day the child was brighter and sat up in bed, but in the evening the temperature rose to 103°, and pulse rate was still 100, and shortly afterwards she exhibited restlessness, and lay in bed, first on one side and then on the other, with legs drawn up towards abdomen and head strongly retracted. The child complained of frontal headache, but apparently pressure over the occiput caused pain. Vomiting occurred several times, and a frequent "meningitic cry" was exhibited. Urine normal. Examination of fundi revealed papillitis of left disc with blurring of its edge, together with a medium-sized retinal hæmorrhage above the disc. No tubercles seen, right disc normal though rather pale. Large perforations were present in both membranes with polypoid granulations filling up the tympanic cavities; considerable discharge from both ears, doubtful tenderness over left mastoid process. The condition remained practically unaltered for 10 days, when the child became much brighter, and the headache and drowsiness rather rapidly disappeared. The temperature was about 100° from the 3rd to the 9th day, when it became subnormal, and remained a little below normal for some days. The symptoms completely subsided, and child was discharged on 26th day quite well.

*Otitis media suppurativa; acute mastoiditis; lateral sinus thrombosis.*—F. C—, female, æt. 31, married. No history of previous illness. Otorrhœa on left side for more than 30 years. Pain on this side for 6 weeks, more acute and

accompanied by a swelling behind the auricle for 5 days. On admission there was tenderness over left mastoid process, where oedema of the skin was present, with pus between it and the bone. Meatus was blocked by a large polyp, temperature 97·4°, pulse 92, respirations 18. Pus discharged freely immediately after skin-incision was made and carried down through the periosteum. On wiping this pus away, a fistula was seen in the planum mastoideum leading into the antrum. This was much enlarged and contained a cholesteatoma, which had become infected. The roof of the antrum had been destroyed, and the dura was covered with granulations. In anterior wall of antrum the facial nerve had been exposed by the disease. The cholesteatoma had made its way into the sinus groove and the sinus was thrombosed for about 1½ inches, the clot in parts being soft and purulent. The internal jugular vein was exposed in the neck and ligatured about the level of the hyoid bone and divided, together with the common facial vein. There was still fluid blood in the jugular, and its distal end was ligatured and sutured to the skin. The tympanum contained much pus, and a large polyp was growing on the posterior wall. Ossicles not seen, cavity washed out with 1 in 40 carbolic, the sinus was then opened and the clot scraped away. The bleeding was stopped by plugging and the mastoid filled with gauze, the lower part of incision in neck was sutured. Temperature was slightly raised for 24 hours but was normal again at the end of 36 hours, and the pulse rate was 80. General condition good. Plug removed from lateral sinus on 5th day, no bleeding. The upper part of wound was plugged daily, the lower healed by first intention. Convalescence rapid, and patient was discharged on 19th day.

#### *Fatal cases.*

1. *Chronic otitis media suppurativa; operation and grafting; temporo-sphenoidal abscess.*—M. M—, female, æt. 14, school. Measles several years previously. Otorrhœa for 4 months before admission. Frequent headache during this period. Tonsillotomy performed 14 days before admission. Admitted to hospital with perforation of tympanum, no tenderness over mastoid, temperature 98°, pulse 88. Complete mastoid operation on 6th day. Extensive disease throughout mastoid cells. Progress uneventful till a week later, when grafting was performed. Sickness on several occasions after grafting, and on 6th day sudden fit, with convulsive movements of right side of face and right arm. Pupils dilated, conjugate deviation of eyes to left. Fit lasted 30 minutes, and another occurred 1 hour later, in which both arms and legs were moved convulsively. No subsequent weakness, and no alteration of reflexes. Optic neuritis observed on right side. Unconsciousness succeeded fit for 7 hours, and for remainder of day patient was drowsy. Pulse 120, temperature 100·8°. Vomiting occurred the next morning. General condition began to improve, and though occasional sickness was noted, drowsiness disappeared, and patient got up 27 days after first operation. Discharged to convalescent home 4 days later. Readmitted 3 days after discharge with a history of having suffered from continual vomiting, frontal headache, and lethargy. On examination nothing noticeable about site of operation, except slight persisting discharge from left ear. No tenderness in neck, no localising signs indicative of increased intracranial pressure. Temperature 97·4°, pulse 68. Examination of discs revealed

slight papillitis on both sides, more marked in left eye. Temperature remained subnormal, and pulse about 60 per minute until 8th day, when wound was reopened, more diseased bone was removed, and trocar was passed through dura, and an abscess in temporo-sphenoidal lobe was drained. After this temperature rose in 24 hours to 99·8° and pulse to 100. Papillitis, however, increased in severity, and sickness persisted; amount of discharge abundant. No improvement in symptoms took place; vomiting was frequent, and at the end of 3 weeks temperature rose to 101°, and persisted at that level, with daily intermissions, for 5 days, when it rose to 104° and remained thereabouts till death, which took place 31 days after drainage of abscess. No P.M. Pathological report: Culture of pus from cerebral abscess yielded pure growth of *Streptococcus pyogenes*, which possesses low degree of pathogenicity.

2. *Acute mastoiditis, following on chronic otitis media suppurativa; right cerebellar abscess.*—N. M.—, female, æt. 8. Scarlet fever 4 years before admission. History of chronic otorrhœa for longer period than this, intermittent in character and noticeably worse after the attack of fever. Seven days before admission discharge increased; treated by irrigation, absent on next day, but reappearing again 3 days later. The day before admission patient rather suddenly became drowsy, but was sufficiently conscious to answer questions. Vomiting occurred 3 times on this day, and again shortly before admission, when it was observed that there was œdema over the right mastoid process, and pressure over this appeared to cause pain. Offensive discharge present, right arm weaker than left; right knee-jerk exaggerated. No nystagmus, no conjugate deviation. Patient always lay on left side in bed. Pupils both reacted to light. Discs showed blurring at edge, and were slightly swollen. Vessels enlarged, and partly hidden in places by œdema of retina around papillæ. Temperature 100°, pulse 84, respirations 40. Immediate operation revealed only a little pus in mastoid cells; antrum was small, and contained purulent granulations. Dura of middle fossa was covered with similar granulations. Lateral sinus contained fluid blood, but pus was present in the sinus groove. Wound plugged with gauze. Very little improvement resulted. Condition of coma persisted, respiration rather slower, pulse about 100. Second operation on 8rd day. Dura exposed, and cerebellum punctured with median-sized trocar upwards, downwards, backwards, forwards, and inwards, but no pus was withdrawn. Temporo-sphenoidal lobe was similarly treated also without result. Death occurred suddenly 4 hours later. P.M.—No sign of meningitis with exception of small grey area over posterior surface of petrous bone. To this brain was adherent, and separation of it caused the exit of a small quantity of foul pus. The right lobe of cerebellum was almost completely occupied by a large abscess extending into vermis. It contained offensive dark-coloured pus. There was no lining wall, the abscess being evidently an acute one. Remainder of brain healthy. Right lateral sinus small, containing breaking-down clot. Pus still present in sinus groove. No jugular thrombosis. Other organs healthy.

3. *Otitis media suppurativa; acute mastoiditis; lateral sinus thrombosis.*—J. K.—, male, æt. 19, engineer's apprentice. Otorrhœa from right ear for 5 months. Discharge not profuse. Pain with sickness appeared 1 week before

admission, constant during last 2 days. Temperature on admission 100°, pulse 102. Antrum and mastoid cells opened up the day after admission. Much pus and numerous granulations present in cells, which ran for three quarters of an inch behind lateral sinus. Sinus itself contained septic clot, and at one point its wall had sloughed. Tegmen antri was removed, but dura appeared healthy. Sinus completely exposed and internal jugular vein ligatured in neck, together with common fascial vein. Lateral sinus incised and allowed to bleed so that infected thrombus was washed away. Vein in neck secured to skin and hemorrhage controlled by plug. Condition on next day was good. Temperature normal, no sickness and no headache. Examination of eyes revealed no abnormality in fundi. Pulse on 2nd day was 64, and temperature on 3rd night began to rise, reaching 102° at mid-day, 72 hours after operation. Wound dressed, appearance normal. During the next 24 hours patient developed signs of meningitis and temperature persistently rose until it reached 106° just before death. P.M.—No pus remained in right tympanum. Left ear contained no pus either. Extensive purulent basic meningitis was present, the cerebral ventricles contained purulent fluid, and in the middle part of under aspect of right temporo-sphenoidal lobe was a ragged abscess cavity, three quarters of an inch in diameter. Right lateral sinus contained firm clot; other sinuses healthy.

4. *Otitis media suppurativa; acute mastoiditis; right cerebellar abscess.*—D. J. L.—, male, *et.* 7, school. Abscess discharging more or less for 4 years behind right ear. Sudden onset of headache 3 days before admission, followed next day by vomiting; shortly before admission a fit occurred, in which general rigidity and retraction of head was observed. On admission semi-comatose, redness and fulness over right mastoid, with discoloured, protuberant, fluctuating mass the size of a thimble. Pulse very irregular, varying between 120" and 150". Operation performed half an hour after admission. Antrum and mastoid cells completely exposed, dura over temporo-sphenoidal lobe found healthy. Wound enlarged posteriorly and resistance found over cerebellum. Trocar was inserted and a drachm of very offensive pus evacuated. Trocar replaced by silver drainage-tube and rest of wound plugged. Amount of discharge profuse. Temperature subnormal and remaining so for 11 days, during which period occasional fits were observed, with plaintive cry and retraction of head. Reflexes normal, no signs of optic neuritis. Wound became cleaner and child's condition improved greatly. Hernia cerebri developed. Twenty-one days after operation vomiting occurred and was repeated twice. Wound was opened up and cerebellum further explored, with negative result. After operation meningeal cry was continuous for some hours. Pulse was 133, temperature 103°, and head was slightly retracted. For next 8 days temperature did not fall below 101°, pulse remained about 140, and condition of patient grew worse; complete retention was present for last 4 days of life, which ended with fall of temperature by crisis 9 days after second operation. P.M.—Diffuent brain-substance was protruding through wound. Abscess of small size in right lobe of cerebellum had been successfully drained, but hernia cerebri was composed of broken-down right temporo-sphenoidal lobe. No thrombosis of lateral sinus present. Old pleural adhesions on both sides and cessation of one bronchial gland.

5. *Otitis media suppurativa; mastoiditis; left temporo-sphenoidal abscess.*—

A. S—, male, *æt.* 24, grocer's assistant. Discharge from left ear for 3 years, more profuse during last three months. Symptoms acute for 10 days before admission. Discharge absent for first 6 days; reappeared 4 days before admission. Several rigors had occurred. On admission pain on pressure over mastoid process, but no oedema, tenderness over course of internal jugular vein with redness of skin. No optic neuritis. Temperature  $100.4^{\circ}$ , pulse 92; twelve hours later temperature became  $104^{\circ}$  and pulse rose to  $108^{\circ}$ . Operation was performed. Pus was evacuated from mastoid antrum, the cells were fully opened up, and dura was exposed over attic. No pus in sinus groove. After operation patient was very noisy, and temperature, which had fallen to  $99.4^{\circ}$  before operation, rose again to  $104^{\circ}$ . A state of coma supervened, and breathing, which at first was merely stertorous and rapid, became greatly embarrassed. Patient again taken to theatre about 12 hours after first operation; no anæsthetic given. Breathing ceased after cleansing of wound. Artificial respiration carried out, and trocar plunged into brain, evacuating a quantity of very offensive pus. Heart-beats had remained good throughout this period, but after abscess had been evacuated pulse got gradually weaker, and no sign of spontaneous respiration was observed. Lumbar puncture performed and 6 oz. of cerebro-spinal fluid withdrawn. Stimulants administered, but all efforts were unavailing. Pathological report on cerebro-spinal fluid: Large numbers of phagocytes present in turbid fluid; also groups of staphylococci and a bacillus morphologically resembling the diphtheria bacillus. Culture yielded pure growth of *Staphylococcus albus*, bacillus not cultivated. P.M.—Removal of brain revealed small abscess rather deeply seated on under surface of left temporo-sphenoidal lobe. It had ruptured into descending cornu of left lateral ventricle and inflammation had spread back to 4th ventricle *via* the iter and thence to cisterna magna, producing post-basic meningitis. Right ventricle not affected. No thrombosis of great sinuses present. Mastoid cells completely opened up.

5. *Otitis media suppurativa; acute mastoiditis; lateral sinus thrombosis.*—

C. P—, male, *æt.* 22, clerk. Past history good until 3 years before admission, when patient had attack of influenza; intermittent otorrhoea present ever since. Four weeks before admission patient awoke at night with severe pain in left ear. He felt something burst in the morning and discharge from ear increased, and pain was relieved. This discharge continued till day before admission, decreasing daily. Pain present over mastoid for 1 week, most severe on day before admission. Deafness and frequent tinnitus present on left side for a considerable period. On admission the auricle was pushed forwards, and skin over mastoid was red and swollen. Marked tenderness present on pressure over tip of mastoid. Slight discharge from meatus, the membrane being destroyed except at its edges. Temperature  $100.4^{\circ}$ , pulse 88, no optic neuritis. On day of admission mastoid cells were opened up, and abundant pus was found extending downwards as far as tip of mastoid process. Complete removal of these cells was carried out, the antrum was fully opened up, the lateral sinus exposed between sigmoid sinus and jugular foramen, and the dura exposed through roof of antrum. Wound left open. Daily irrigation performed with hydrogen peroxide; convalescence good for 12 days, though the temperature was usually subnormal and pulse rate varied between 60 and 70, and patient experienced a

good deal of headache. On the 12th day temperature suddenly rose to 103.6° and pulse rate was 104. It fell again the next morning to 99.4°, rising in the evening to 104.8°. On the following day patient was quite conscious though headache was present. Wound looked healthy, but temperature was 105.4°, therefore it was decided to tie the jugular vein. Both internal jugular and common facial veins were secured in the neck, the former being tied between two ligatures, and its upper end fixed in wound. Both veins contained fluid blood. Condition was not improved by operation and the next day the original wound was reopened, the lateral sinus incised and found to contain purulent clot. This was removed and lavage of the sinus *via* internal jugular vein was attempted, but had to be stopped as bleeding took place from inferior petrosal sinus. Lateral sinus was plugged, and the wound irrigated with 1 in 40 carbolic. Patient was drowsy, and though temperature fell the next morning to 98.8°, it rose again at mid-day to 102.4°, and 2 days after the last operation there was a sudden attack of dyspnoea, preceded by spasmodic movements of the limbs, with rigidity, apparently affecting both legs and arms equally. Preparation was made to explore cerebellum, but patient died about 15 minutes after onset of dyspnoea. No P.M.

7. *Acute mastoiditis following on chronic otitis media suppurativa; lateral sinus thrombosis; mastoid operation; ligation of internal jugular vein.*—E. J.—, male, *æt.* 18, paper-stainer. Discharge from right ear for 6 months. One week before admission discharge ceased, and patient suffered from severe headache. Discharge reappeared 4 days later, and 2 days before admission vomiting occurred and was repeated on several occasions until admission. On examination a profuse discharge was observed from the right ear, but no oedema over the mastoid was present, and no great tenderness, except at the tip, which was excessively painful on pressure. There was also some pain down the neck, but no definite thickening along course of internal jugular vein. Temperature 104.2°, pulse 112, respirations 24 per minute. Within 12 hours of admission temperature fell to 100°, and though patient was in great pain, his mental condition showed some improvement. During the day temperature rose again, reaching 106°, and a rigor took place. Operation a few hours later. Very offensive pus was found invading all mastoid cells and antrum. Dura covered with dirty granulations possessing the same foul odour. No extra-dural abscess was found. The lateral sinus was punctured with a needle and found to contain fluid blood. The field of operation was irrigated with saline and plugged with gauze. Temperature the same night was 98.4 and pulse 74. The following day it was again 106°, and a rigor followed. A second operation was performed, the internal jugular vein being exposed in neck, ligatured in two places, and divided, the upper end being brought to surface of wound. No improvement resulted, and 12 hours later temperature again rose to 106°, and a third rigor took place and was repeated the same day. Some improvement was observed in the succeeding 24 hours, temperature being about 102°, and pulse rate 84. At the end of this time the wound was reopened and the lateral sinus incised, and much offensive septic clot removed from its interior. Upper end plugged and the lower washed out through wound in neck. Condition gradually grew worse, coma supervened, and respirations became progressively feebler, death occurring

on 8th day. P.M.—Intense purulent meningitis present over right vertex. Extensive purulent inflammation in both middle and posterior fossæ on both sides and on the under surface of tentorium cerebelli. Brain-substance healthy, ventricular cavities clean. Right lateral sinus and right cavernous sinus both thrombosed. Other organs not examined.

#### CARIES OF SPINE.

*Cervical.*—Females 2. Died 1. Abscess 2; paraplegia 1.

*Treatment.*—Incision and scraping of abscess 1; laminectomy, 2 operations on 1 case.

*Fatal case. Cervico-dorsal caries; paresis of legs.*—D. P.—, female, æt. 5. Family history: consumption in mother's family. Past history: measles, mumps, and chicken-pox, when a baby, otherwise healthy. 1 year before admission patient began to complain of pain in neck. She was observed to keep her neck stiff, but continued to walk about for 8 months, at the end of which time she was treated by rest in recumbent position. This treatment was carried out for 9 months, but beyond the diminution of pain no improvement was observed, and progressive weakness was exhibited in lower extremities. On admission neck appeared shortened, lower cervical and upper dorsal spines were prominent. Movements of legs very poor, some power of flexion only being felt. No anæsthesia, knee-jerks brisk, ankle- and patella-clonus obtained on both sides, well-marked double Babinski. No incontinence. Patient remained in bed for a fortnight and showed no alteration in condition. Laminectomy was, therefore, performed, several laminæ and spines being removed and an abscess discovered outside the dura. This was washed out and the wound was closed. The abscess cavity was small and present on right side of theca. Condition remained unaltered for 3 weeks, when further operation was decided upon. The wound was reopened and some pus and carious bone were removed from neighbourhood of bodies of vertebræ, the theca was scraped, and the wound irrigated with lotion. The wound was closed, but the following day it was found that the dressings were soaked with cerebro-spinal fluid. Temperature rose to 102·8°, pulse 128, respirations 36. Two days later the discharge was purulent and the child, who complained of pain in legs, was breathing rapidly and irregularly. Temperature still over 102°. Wound became more offensive and patient apparently suffered considerable pain below lesion in cord. Temperature remained high and death occurred at the end of 7th week. P.M.—wound offensive. Disease of vertebræ had involved bodies of last cervical and first dorsal vertebræ. All trace of bone disease had been removed. The anterior portion of dura beneath wound was covered with thick red granulation-tissue, the inflammation extending also on to posterior aspect of theca. The 8th cervical and first 2 dorsal nerves on each side emerged through this inflammatory mass. No wound of the dura was found and there was no trace of leptomeningitis. The cord in neighbourhood of bone disease was diffuent. Brain healthy. Dense pleural adhesions were present on both sides. No trace of tuberculosis in lungs, but extensive broncho-pneumonic consolidation of right upper and left lower lobes was present. No tuberculous lesions in other viscera, which were healthy. Pathological report: Cord above the lesion showed

degeneration [of posterior columns, below the lesion degeneration is most marked in lateral columns; acute meningitis is shown near the lesion and tuberculosis in the meninges.

*Dorsal caries.*—Males 3; females 3. Spastic paraplegia 1; flaccid paraplegia 1; psoas abscess 1; lumbar abscess 1; iliac abscess 1; bilateral psoas abscesses 1.

*Treatment.*—Incision, lavage, and suture of abscesses 4; costo-transverso laminectomy 1; laminectomy 1.

*Lumbar caries.*—Males 12; females 5. Died 1. Readmission 3. Psoas abscess 8; recurrent psoas abscess 5; contraction of psoas 1; lumbar abscess 1; iliac abscess 1; congenital hairy mole of face 1; bilateral psoas abscess 1.

*Treatment.*—Incision, lavage, and suture of abscess 11; incision lavage, and drainage 6; rest 1; *nil* 1. Sketching of contracted psoas 1 (with excision of hairy mole).

*Caries of sacrum.*—Female 1. Died (see abstract below).

#### *Fatal cases.*

1. *Lumbar caries; psoas abscess, right and left.*—J. K—, male, *æt.* 33, carman. Family history good. Past history: Operation for psoas abscess on right side in May, 1904. Treated by incision and drainage, patient being discharged in June of the same year. After this condition improved considerably and patient gained in weight and strength, but the lumbar pain gradually returned and patient became feverish, having a poor appetite, and occasionally he vomited. On readmission, February 14th, 1905, an immovable swelling was present in left lumbar region which was not painful on palpation. The sinus of former operation was practically closed. On February 23rd the site of former operation was opened up again and the abscess cavity scraped and plugged. Considerable discharge followed this operation, but hectic fever, which was present before operation, persisted, and patient was very little relieved. No physical signs could be found in chest except a few scattered rhonchi, and sputum contained no tubercle bacilli, though patient was expectorating a small amount of blood-stained sputum. The urine on March 15th contained a trace of albumen and heavy deposit of urates. On March 22nd the mass felt in left lumbar region was cut down upon and a fair-sized abscess was drained. No track could be found across the front of the bodies or lumbar vertebræ. Some slight improvement in condition resulted from this operation; both right and left wounds were irrigated daily and the discharge was copious. Hectic fever persisted, and on April 11th patient was put on balcony treatment. Cough diminished and general condition showed slight improvement. Hæmoptysis, however, returned on June 9th, and patient was steadily becoming weaker and losing weight. Wounds showed sign of communication across front of vertebral bodies. Further incisions and drainage were effected on July 5th, but no improvement resulted, and on July 7th patient had further hæmoptysis, expectorating about 3 oz. of blood during a fit of coughing. Fairly definite signs of tubercle at right apex had been noted a fortnight before. Death occurred on July 10th. P.M.—Bilateral psoas abscess, the right one extending into upper part of thigh, causing some erosion of surface of femur. Tuberculous foci were found in cancellous tissue of bodies of both dorsal and lumbar vertebræ. The psoas muscles were



converted into lardaceous-looking material. Liver very fatty and enlarged, but not lardaceous. Spleen large and diffuent. Kidneys pale and swollen. Pleurae adherent almost all over, in some places in the form of broad bands. Old and recent tuberculous deposits were present in the apices of all the lung lobes save the left lower lobe. Heart fatty, valves healthy, pericardium normal.

2. *Caries of sacrum; gluteal abscess.*—E. M—, female, æt. 39, married. Patient's last child born 3 months before admission. Labour normal, but patient was weak and stayed in bed more than 3 weeks after birth of child. Six weeks before admission swelling was first observed in left gluteal region, considerable pain was present, and incision under local anæsthetic was made into swelling. On admission redness and swelling were present in left gluteal region, with two sinuses discharging a large amount of pus. A probe could be passed 3 inches, but no bare bone was felt. Rectal examination revealed œdematous and puffy swelling on left side, and pressure caused profuse discharge from sinuses. Urine contained a trace of albumen. On 5th day sinuses were enlarged, and a large abscess cavity was entered leading towards front of sacrum. Temperature, which had been 99·2° before operation, rapidly rose to 104°, pulse rate became 140, and respirations 40. Death occurred on day after operation. P.M.—Abscess cavity found to arise in connection with bare bone on anterior surface of last sacral vertebra. Liver large and fatty, spleen bulky and diffuent. Kidneys showed mixed nephritis. Lungs congested.

#### CELLULITIS AND ABSCESS.

*Cellulitis.*—Males 43; females 18. Died 4. Erysipelas 2; pelvic cellulitis 8; urethral stricture 1; infective venous thrombosis 1; diabetes 1; death under anæsthetic 1.

*Treatment.*—Tracheotomy 3; circumcision 1; removal of sequestrum from tibia 1; examination under anæsthetic 1; hot dressings 11; *nil* 1; incision and drainage in the remainder.

#### *Fatal cases.*

1. *Cellulitis of neck; death under chloroform.*—H. P—, male, æt. 39, mineral water bottler. Three days' history. On examination large, tender, red swelling on right side of neck from lower jaw to clavicle. Skin œdematous. Carious stumps present in lower jaw; fluctuating area in centre of swelling. Temperature 100°, pulse weak. Anæsthetic on day of admission. Soon after this was commenced dyspnoea was noticed; this increased, and tracheotomy was performed. Breathing ceased whilst tube was being inserted, and, in spite of stimulants and prolonged artificial respiration, patient died. Inquest P.M.—Heart-muscle flabby and fatty. Valves healthy. Considerable aortic atheroma. Lungs congested. Extreme œdema of larynx. Other organs healthy.

2. *Cellulitis of neck; death under chloroform.*—F. P. K—, male, æt. 28, carman. Three days before admission a ranula was incised in out-patient department. Throat was sore the next day, when patient came to hospital. The following day he did not attend, but three days after operation he was again seen suffering from urgent dyspnoea, with swelling of neck over front of larynx

and trachea. Mouth in very septic state, with enlargement of tonsils and considerable difficulty in opening mouth. Temperature 105°. Tracheotomy was decided upon and chloroform was administered, but shortly after the commencement of anæsthetic the breathing became very bad and tracheotomy was rapidly performed through the inflamed tissues. This afforded relief and patient breathed naturally for two or three minutes. Respirations then ceased, but recommenced as the result of artificial aid. Patient then became convulsed and breathing again ceased. Artificial respiration, stimulants, and other efforts failed to revive patient. Inquest P.M.—Extreme purulent infiltration of cervical tissues was present, with tonsillitis. Upper lobes of both lungs engorged; heart-muscle flabby, its cavities containing dark fluid blood mixed with air. Other organs healthy.

3. *Cellulitis of groin after circumcision.*—C. H. L., male, æt. 8 months. Circumcised 3 weeks before admission in out-patient department; pain following after operation. The day before admission penis was observed to be swollen and urine made its way through fistula about half an inch from face of incompletely removed prepuce. On admission skin of penis cedematous, the cedema extending to point on abdominal wall mid-way between pubes and umbilicus. Temperature 105°; diarrhœa present. Unhealthy-looking child. On 4th day foreskin was further incised and the glands fully exposed. Incisions were made through cedematous skin; no pus present. Condition showed very little improvement, temperature did not fall below 102°, and diarrhœa persisted. Area of cellulitis spread and incisions became unhealthy, possibly due to urinary extravasation. Death on 11th day. P.M.—Cellulitis did not extend into scrotum or perineum. Pleuræ, pericardium, and peritoneum were healthy; there was no urinary obstruction and no marked lesion of any viscus.

4. *Cellulitis of foot; perforating ulcer; diabetes.*—J. S., male, æt. 73, army pensioner. Diabetes for 5 years. On several occasions patient was treated in hospital for "blisters on feet." Ten days before admission a sore place was noticed on the ball of right little toe. This increased in depth and inflammation spread to surrounding tissues. On admission cellulitis of both dorsal and plantar aspects of right foot. Very offensive pus could be squeezed from a small aperture on outer aspect. Characteristic perforating ulcer on sole of foot. Urine contained sugar, acetone, and diacetic acid. Arteries somewhat thickened. Operation was proposed, but on the evening of day of admission patient was delirious, and on the following morning became comatose. Half a pint of blood was withdrawn from a vein in the arm, and infusion with 3 pints of normal saline was carried out, but there was no return to consciousness. No urine was passed in the last 36 hours of life; temperature before death was 96°. Patient died on 2nd day. P.M.—Body well nourished. Pericardium healthy, extensive atheroma of aorta, aortic valves competent but thickened. Mitral valve segments also thickened. Left ventricle showed hypertrophy. Posterior tibial artery showed calcification and thrombosis. Lungs and pleuræ normal. Kidneys showed early interstitial nephritis.

*Acute abscess.*—Males 47; females 40. Died 2. Septic meningitis 1 glycosuria 1.

*Fatal cases.*

1. *Abscess of thigh; glycosuria*.—A. H—, male, *æt.* 58, clerk. Family history of carcinoma. Symptoms of diabetes for 17 years. Two weeks before admission pain in left leg, thought to be rheumatic and treated by painting with iodine. This caused a dermatitis and subsequently infection of the cellular tissue. On admission there was a large fluctuating swelling of left thigh, which was red, hot, and tense. Temperature 100°, pulse 100, and poor. Urine 1040, containing a large amount of sugar. On day of admission several incisions were made in the thigh and a very large amount of pus escaped. Patient took the anæsthetic badly. Temperature fell below normal, but general condition showed very little improvement, a sharp rise of temperature on 6th day to 100·6° with occasional rises on the 4 days following. Wound was very foul and patient grew steadily weaker. Death on 11th day. No P.M.

2. *Abscess of chest wall*.—M. K—, female, *æt.* 8 months. Vaccinated at age of 4 months. Swelling on chest wall noticed a few days before admission, when child was very ill, with a temperature of 104°, pulse 100, respirations 20. A large fluctuating swelling was present over upper part of left side of thorax, spreading as far as right margin of sternum and to left posterior axillary fold. Deep to pectoral muscles. On day of admission incision was made and large abscess cavity emptied of thin pus resembling tuberculous fluid; apparently the abscess had originated in axillary glands infected by vaccination. Temperature remained above 102° for 3 days, when further incision was made, but this produced very slight improvement. Septic diarrhoea made its appearance and at base of left lung behind there was impairment of resonance, with harsh breath sounds. Some cough. Temperature at the end of 10 days ran at lower level but again became high, and on 17th day a morbilliform rash appeared around wound and spread for some distance. High fever persisted until just before death, when it fell to 97·6°, death occurring on 20th day, with signs of meningitis, as shown by a squint with spasmodic movements of right side of face and some retraction of head. P.M.—Some destruction of 2nd, 3rd, and 4th ribs was present at their junctions with cartilages. Brain showed septic meningitis on convexity of both hemispheres. Exudation yellowish green in colour; no evidence of tuberculosis. Other organs normal.

## DISEASES OF THE SKIN.

*Lupus vulgaris*.—Males 4; females 3. Face 4; leg 2; neck 1. Carcinoma arising in Lupus, see under "Squamous-celled Carcinoma."

*Treatment*.—Excision 4; scraped 2; nil 1.

*Mycosis fungoides*.—Female 1. Readmitted.

*Treatment*.—X rays.

*Mycosis fungoides, X-ray treatment; cured*.—E. C—, female, *æt.* 33, married. Family history negative. Past history: 6 years ago "blood poisoning" during confinement. Since then patient has suffered from disidrosis every summer with blebs on hands. For 4 years has had eczematous dermatitis on flexor aspects of knees and extensor aspects of elbows and legs. Three years before admission a solid tumour appeared on leg, 1 inch in length, persisting for 1 year

and then disappearing rapidly. At the same time that this tumour appeared a swelling was noticed over left parotid and shortly afterwards 1 over right parotid and another at outer angle of right orbit. These swellings gave rise to considerable irritation, but were not painful. On examination, a nodular hard tumour attached to epidermis was present over left parotid; it was freely movable on underlying structures and its surface showed 2 raised fluctuating swellings, one of the size of a shilling and circular, the other of similar size, but oval in shape. No discoloration of skin. Similar tumours were present over right parotid and close to outer canthus of right eye, together with 8 smaller swellings over surface of face or neck. Cervical glands on right side were enlarged. The skin over both elbows and knees was red and scaly and its surface raised; this caused great irritation, most marked at night. Blood-count revealed the presence of 8400 leucocytes per c.mm. with 44.4 per cent. eosinophiles. A small cyst was removed and its contents found to be granular material with large numbers of cholesterol crystals. Its wall showed inflammation of the corium. Patient was treated by frequent exposure to X rays and the tumours rapidly began to diminish in size. The rays were applied for 20 minutes on alternate days, being intermitted when any sign of dermatitis appeared. The size of the tumours steadily diminished, but the skin became deeply pigmented. At the end of 18 weeks patient was discharged, but was readmitted a month later, when the tumours were almost imperceptible; the X-ray treatment was continued and exposure for 35 minutes was carried out on alternate days. This treatment was continued for 8 weeks, with slight intermissions, owing to occasional headache and giddiness exhibited by the patient. This was thought to arise partly from a condition of chronic dry catarrh which was present in both ears. On discharge no tumours were present.

*Dermatitis herpetiformis.*—Male 1; females 2. Died 1.

*Treatment.*—Dusting powders.

*Fatal case. Dermatitis herpetiformis; pemphigoid.*—E. F.—, female, æt. 21. Past history good. Nine months before admission blisters noticed on tongue. Treated by application of caustic. Five months later similar blisters observed on lips, and subsequently bullous eruption was observed on body. The eruption originated as small blisters, which broke and the base then became red and ulcerated. On admission, lips cracked and covered with a black crust, tongue thickly coated with white fur, breath foul. Small ulcerated areas seen on tongue, cheeks, and fauces; scattered all over the body were vesicles and superficial ulcers, caused by the rupture of similar vesicles. In some situations the formation of secondary vesicles around the primary ones was well shown. The eruption was most marked on left buttock, left elbow, and hand. A few vesicles were present around the vulva. Treatment by means of zinc oxide and boracic powder, together with a Listerine mouth-wash, was carried out. Liquor arsenicalis was also administered in 2-minim doses 3 times a day. No improvement was observed at the end of a week. Two more minims of Liquor arsenicalis were given, and iron was also added to the mixture. The fluid from bullæ was examined, and film preparations showed nothing but a few lymphocytes and polynuclear neutrophiles. Temperature during first fortnight was only slightly

raised, being usually 99°. At the end of this time it ranged about 100°. On 23rd day patient, having shown no improvement either while on arsenic or anti-syphilitic treatment, which was tried for a short time, suddenly had an attack of syncope, with somewhat stertorous breathing and some rigidity of trunk muscles. Recovery from this was quite as sudden as its onset. From this time the pulse gradually grew weaker, and death occurred on 25th day. Urine examined early in disease showed no trace of albumen. P.M.—Thoracic organs normal. Pelvis of right kidney contained a little purulent urine. No pyelitis. Bladder contained some purulent urine also, but no lesion was found in bladder or ureters. All other organs healthy. The lesions on the skin had in some cases exposed the dermis.

### MALFORMATIONS.

*Hare-lip and cleft palate*.—Males 29; females 25. Readmissions 8. Died 1. Single hare-lip and cleft palate 11; double hare-lip and cleft palate 9; hare-lip 12; cleft palate 22; umbilical faecal fistula 1.

*Treatment*.—Suture of hare-lip 25; removal of os incisivum 1; suture of cleft palate 19.

*Fatal case. Complete hare-lip and cleft palate bilateral; suture of palate*.—P. E—, male, *æt.* 7 months. Well-nourished though pale child. Palate sutured by Langenbeck's method on 6th day. Next day temperature rose in the morning to 102°, pulse rate was 148; and in the evening temperature rose to 104·6°, when patient died. P.M.—Body pallid but well nourished. Upper air and food passages healthy. Lungs showed slight patchy collapse of posterior part of lower lobes. No abnormal congestion or broncho-pneumonia. Heart healthy. Abdominal viscera all normal.

*Imperforate anus*.—Males 2; females 2. Died 3. Erysipelas 1 (see Special Table II). Previous colostomy 1.

*Treatment*.—Left iliac colostomy 2; perineal colostomy 1; *nil* 1.

#### *Fatal cases.*

1. *Imperforate anus; exploration of anus; left iliac colostomy*.—R. M—, male, *æt.* 5 days. Full-term child; umbilical hernia noticed at birth, and only 4 toes present on each foot. Anus imperforate, a diaphragm being present  $\frac{1}{4}$  inch from anal depression. Abdomen distended. Attempt to find bowel through anal aperture was unsuccessful, therefore colostomy was performed on left side. Condition of child very bad, revived by injection of 1 minim of strychnine with 10 minims of ether, and artificial respiration. On following morning it was noticed that prolapse of descending colon had occurred through wound, and condition of child was bad, temperature ranging between 100° and 104° until 10th day, when death took place. P.M.—Some peritonitis was present in neighbourhood of colostomy wound. Anus terminated in a *cul de sac*, but rectum could be traced down quite close to this and a probe pushed through with little difficulty.

2. *Imperforate anus, left iliac colostomy*.—H. W. H—, male, *æt.* 1 day. Full-term child; neither bladder nor rectum had been emptied since birth.

Vomiting was said to have occurred once before admission. On examination no anal depression present. Median raphe of scrotum continued back and widened at normal position of anus. No bulging of perineum on crying. Soft rubber catheter was passed into bladder and urine drawn off without difficulty. No attempt was made to find rectum by perineal incision, but pelvic colon was fixed in left iliac region and a small Paul's tube was tied in. Child stood operation well, but about 6 hours later bleeding was observed from wound; no bleeding point could be found and wound was plugged. This controlled hæmorrhage, but child died suddenly about 20 hours after operation. No P.M.

3. *Imperforate anus*.—A. H—, female, æt. 8 days. No other malformation present. Short anal canal present at the upper limit of this impulse present on crying. Incision was made in direction of sacrum; bowel was found, and mucous membrane sutured to skin, a large amount of meconium being evacuated. Except for some rise of temperature after operation child was perfectly well, and the abdominal distension was successfully relieved, but on the 3rd day temperature suddenly rose to 105·4° and death occurred. P.M.—Body well developed. Bladder well formed and healthy. Vagina and uterus normal. Rectum had ended as a *cul de sac* a short distance above anus. It had been successfully sutured to the anal margin. Intestines normally formed and all the viscera healthy.

*Spina bifida*.—Male 1. Sacral meningocele.

*Treatment*.—Excision.

*Ectopia vesicæ*.—Males 5; readmissions 3. Scarlet fever 1; see "Special Abstract."

*Treatment*.—Plastic operations, 5 on one case.

*Malformations, various, fatal.*

1. *Anencephaly*.—M. R—, female, æt. 1 hour. Child was one of twins and born last, by breech presentation. On admission vault of skull absent, soft, pinkish swelling occupying the hollow of the vertex. Eyeballs extremely prominent. The above-mentioned swelling was marked by a groove on either side, suggesting the fissure of Rolando. Cleft palate also present. Death on day after admission. No P.M.

2. *Exomphalos; hernia of liver; talipes*.—A. A—, female, æt. 1 day. Thirteenth child of family; full term. Remainder of family perfectly healthy. On admission a soft swelling the size of a goose's egg was observed projecting through anterior belly-wall; covering composed of stretched-out amnion. Remains of cord adherent to lower part of sac. Death on 2nd day. P.M.—Body of fair size; large oval, brownish area between costal margin and umbilicus. Covering purely fibrous; no trace of recti muscles, though lateral muscles of abdominal wall were present. Right lobe of liver formed globular projection beneath this area. Umbilicus was found intact below this protrusion. Cæcum of infantile type directly below liver and loose in mid-line. Descending colon was the only part of large intestine closely bound to posterior abdominal wall. Diaphragm well formed. Right-sided talipes. No spina bifida; cord normal. Brain and other viscera healthy.

3. *Malformations of trunk and pelvic viscera*.—T. S. O—, male, *set.* 2 hours. On admission full-term child. Anus imperforate, no dimple indicating its normal position. Perineum apparently all bony. Penis had no meatus, left fibula absent; left foot only partially developed, the hallux being the only toe present. Death occurred on day after admission. P.M.—Floor of pelvis formed by solid bony plate with no aperture. Penis represented by small tag of skin. Left fibula absent in lower half and partially fused with tibia in upper portion. No spina bifida. Upper portion of *œsophagus* ended in *cul de sac*, while lower portion opened into trachea. Stomach large and of hour-glass shape. No definite kidneys could be found. Lower end of gut opened apparently into cloaca, having no external aperture. Urachus led from umbilical cord to this apparent cloaca. Internal genitals suggested the female type. Lungs normal, with slight atelectasis. Heart large but normal.

#### UNCLASSIFIED.

##### *Fatal cases.*

1. *Marasmus; diarrhœa and vomiting*.—L. B—, male, *set.* 6 weeks. Treated as out-patient for furunculosis. History of diarrhœa and vomiting for one month. On admission child was very ill-developed and extremely emaciated. Shortly afterwards temperature rose to 104°, and subcutaneous infusion with saline was carried out. Condition temporarily improved, but child became worse, temperature fell to 97°, and death occurred 36 hours after admission. No P.M.

2. *Foreign body in bronchus*.—H. M. S—, male, *set.* 14 months. About 1 p.m. on September 19th, 1905, the child was sucking a mutton-bone when he was suddenly seized with a choking fit. A doctor was summoned and he performed tracheotomy. The child was sent up to hospital 9 hours later. On admission child was breathing satisfactorily and was fairly quiet; no bone could be felt in air-passage when child was examined and the tube replaced by a Durham's tracheotomy tube. Marked shock was present, and though infusion was performed death occurred about 12 hours after admission. P.M.—Supposed tracheotomy had been performed through the thyroid cartilage. Larynx and trachea were healthy. Impacted in the right bronchus was a piece of bone measuring one third by one quarter of an inch. It was not tightly impacted. All over both lungs were purplish areas of collapse, most noticeable in the lower lobe. The condition was equally marked on both sides. There was no consolidation, but the cut surface of lung had a granular appearance, presumably due to commencing broncho-pneumonia. Thymus slightly enlarged; all other viscera normal.

#### SCARLET FEVER ARISING IN HOSPITAL.

Seven cases, occurring in January, April, May, June, and July. Following operations: for reducible inguinal hernia 3 cases, for ectopia vesicæ 1 case, acute mastoid 1 case, suture of lacerated wounds of arm and leg 1 case. Cases not operated on: necrosis of femur 1.

1. *Necrosis of femur, lower extremity, sinus; scarlet fever; recovery.*—E. H.—, male, *æt.* 3. Admitted May 20th, 1905. Measles about 2 years ago. Operation for abscess over lower end of right femur 18 months before admission, sinus discharging ever since. On examination child was well nourished and strong-looking, with no skin-eruption and no history of recent infection. Sinus leading down to bone on outer side of right femoral epiphysis. Knee-joint unaffected. Scarlet fever arose on 7th day with well-marked eruption over trunk, sore throat, and strawberry tongue. Temperature 100°, pulse 120. Transferred to Block 8. The rash was at its height the next day, temperature 100°, urine normal. The rash faded on 6th day of fever and by this time temperature was normal and the child was in good condition. No albuminuria or other complications arose and the sinus discharged very slightly, when patient was sent out on July 3rd.

2. *Scalp wound and lacerated wounds of arm and leg; suture of wound; scarlet fever; recovery.*—H. T.—, male, *æt.* 19, cycle-fitter. Admitted June 1st, 1905. No history of infection. Patient had been run over and sustained flesh wounds of both extremities. These were cleaned up on day of admission, and condition of patient was perfectly good until the 7th day when a typical scarlet fever eruption made its appearance. Transferred to Block 8. Uncomplicated case, at no time was there any albuminuria. Discharged on July 7th.

3. *Ectopia vesicæ; Thiersch's operation; scarlet fever; recovery.*—P. S. H.—, male, *æt.* 3. Admitted April 4th, 1905. In hospital on two previous occasions, no operation performed. No history of specific fever or infection. On examination a healthy-looking child with the characteristic deformity of ectopia. Posterior wall of bladder prominent, orifices of ureters easily seen. Pubic bones separated by about 1½ inches. Penis consisting only of corpus spongiosum, complete epispadias. Scrotum small, testes undescended. Plastic operation on 7th day effected covering of bladder with skin of anterior abdominal wall. The wound broke down on 3rd day, and patient was treated with daily baths. The skin-flaps sloughed, but the wound gradually became covered with healthy granulations, and it was cleaned by the end of the third week. On May 29th, temperature suddenly rose to 102°, pulse rate was 152, and a well-marked scarlet fever eruption appeared, accompanied by a sore throat and strawberry tongue. Patient transferred to Block 8. Mild case, no complications. Discharged on July 8th.

4. *Otitis media suppurativa; acute mastoiditis; antrotomy; scarlet fever; recovery.*—C. B.—, male, *æt.* 3. Admitted May 19th, 1905. No history of infection. A few days' history of acute pain in left ear, with discharge and tenderness over mastoid. Temperature 98.6°, pulse 120. Atrotomy performed on day of admission. Wound partially closed. Condition excellent until 6th day, when temperature rose suddenly to 102.2°, pulse rate 128. Scarlet fever eruption made its appearance. Transferred to Block 8. Uncomplicated case. Mastoid wound healed rapidly though discharge persisted, and some discharge was noticed from right ear before patient went out on July 3rd.

5. *Reducible inguinal hernia; bilateral; radical cure; scarlet fever; recovery.*—A. P.—, male, *æt.* 18, footman. Admitted on May 31st, 1905. Past



history good, no history of infection. Hernia present on both sides for 13 years, always reducible. Radical cure by Bassini's method on the 7th day, performed on both sides. The sac on right side contained omentum and small intestine; silk sutures were used to close the inguinal canal. Bowels were not opened for 4 days after operation, and temperature showed steady increase on 4th day and was 102° the following morning. Bowels were open by enema. On this day a scarlatiniform rash made its appearance, the throat was injected and sore, and the tongue presented the typical "strawberry" appearance. Patient was discharged to fever hospital on 7th day. Wound healed by first intention.

6. *Reducible inguinal hernia; radical cure; scarlet fever; recovery.*—F. A.—, male, *æt.* 19, labourer. Admitted on April 4th, 1905. No history of infection. Reducible inguinal hernia present on right side for 10 years. Radical cure by Bassini's method with silk performed on 4th day. The sac contained small intestine, which was returned to abdomen. The following night temperature was 101°, rising on 3rd day to 102°. The following morning it fell again to 100·4° and remained down for 12 hours, when it again rose and reached 103° on the 4th night, when the signs of scarlet fever appeared, as manifested by skin-eruption, sore throat, and "strawberry tongue." Patient was transferred to Block 8; the stitches were removed on 8th day, and the wound healed by first intention. Temperature was normal on the 4th day of the fever, and the attack was a very mild one with no complications. Discharged from Medical side on April 22nd.

7. *Reducible inguinal hernia; varicose veins; radical cure and excision of veins; scarlet fever; recovery.*—Admitted on January 16th, 1905. A. F.—, male, *æt.* 30, baker. No history of infection. Varicose veins present in calves of both legs for 8 years. Reducible inguinal hernia on left side for 12 years. Operation on 10th day. Hernia treated by Foster's method, the sac containing omentum, which was ligatured and removed. Veins treated by local excision. Twenty-four hours after operation temperature was 102·4°. The following night it rose to 105·2°. Wounds dressed, no signs of suppuration found. The following day temperature was 103·4°, but was down to 101° the following morning. The wounds were dressed, and that on the right leg found to be suppurating; the other wounds were healthy, but patient's extremities and trunk were covered with a bright red eruption which was almost characteristic of scarlet fever, while the tongue was covered with thick white fur, showing large red papillæ. The case was thought to be one of scarlet fever, and was transferred to Block 8. No complications arose, and patient was discharged on February 12th.

## SUMMARY OF INJURIES.

---

### BURNS AND SCALDS.

*Burns.*—Males 11; females 15. Died 9. Readmission 1. Erysipelas 2 (see Special Table II); varicella 1; epilepsy 1.

*Causation.*—Clothes ignited 21; sat on fire (suicidal) 1; burning paraffin 1 fell in fire 1; burning flour 1.

*Treatment.*—Picric acid 10; bardella bandage 8; boracic baths 2; soda baths 1; stimulants 4; saline infusion 1; scrubbed under chloroform 1; Thiersch grafting 3; unguenta 2.

*Fatal cases.*

*Under 24 hours.*—Males, 14 months, 1; 5 years, 2. Females, 7 years, 1; 43 years, 1.

*Over 24 hours.*—Male, 22 years, 1. Females, 1 year, 1; 2 years, 1; 4 years, 1.

*Fatal case. Burns; suicidal; ingestion of irritant poison.*—T. H—, male, *æt.* 22, shop porter. Patient stated that he had made a bonfire of rubbish on which he had sat without any clothes on. On admission a frail youth with extensive superficial burns over chest, back, left arm, abdomen, buttocks, and upper half of thighs. Temperature 99·2°, pulse rate 124. Patient suffering from shock. Infusion with 3 pints of saline was carried out and condition showed slight improvement. This was not maintained and the following day 3 attempts at intravenous infusion were made but they failed, owing to thrombosis occurring in the vessels. Death on 3rd day with temperature 103·4°. P.M.—Post-mortem staining well marked. Lungs congested, kidneys showed slight congestion. The stomach on its greater curvature showed minute hæmorrhagic spots and there was a good deal of mucus clinging to stomach wall. Pharynx and œsophagus were normal, while intestines showed patches 2 or 3 inches in length of slight catarrh with congestion of vessels. The large intestine was quite normal.

*Scalds.*—Males 12; females 12. Died 4. Varicella 2.

*Causation.*—Hot watery fluids 21; boiling dripping 1; drinking from teapot 2.

*Treatment.*—Picric acid 8; boracic lotion 6; boracic baths 4; unguenta 6; medicinal treatment 2; bardella bandage 3.

---

## INJURIES OF THE HEAD AND NECK.

*Concussion.*—Males 29; females 17. Died 1.

*Complications.*—Scalp wounds 11; ruptured tympanic membrane 1; cortical hæmorrhage 1; fractured clavicle 2; fractured metacarpal 1; measles 1.

*Treatment.*—Rest and medicinal treatment; lumbar puncture 2.

*Fatal case. Concussion, traumatic cortical hæmorrhage.*—E. McK—, male, æt. 22, clerk. While playing football on day before admission patient fell backwards on to the ball. He continued to play for a few minutes and then fell down and was sick several times. He rapidly became unconscious, and the state of coma increased until admission, about 26 hours after accident. On examination patient was quite unconscious and his breathing was stertorous. Corneal reflexes were present, pupils small and equal, light reflex sluggish. Knee-jerks present, plantar stimulation produced extensor response. No bleeding from nose, mouth, or ears. Temperature 101·8°, pulse 96, respirations 40. Lumbar puncture withdrew 10 drms. of clear fluid. Pulse shortly afterwards became 130. Condition of coma persisted and on 2nd day the right pupil was observed to be dilated and some facial paralysis was present on right side. The left leg appeared more flaccid than the right. Reflexes all abolished. Death on 2nd day. P.M.—No external marks of injury. No effusion of blood in scalp and no fracture of skull bones. No extradural hæmorrhage or bruising of the dura. Blood was extravasated over the cortex of right side of brain extending to upper part of left Rolandic area. At the base the hæmorrhage extended around the medulla and involved the roots of 9th, 10th, 11th, and 12th nerves on right side. The vessels of right cortex were intensely congested, but the site of hæmorrhage was not ascertained. No laceration of brain-substance. Ventricles contained no blood and the cerebral matter was healthy. Vessels at base of brain appeared healthy. Right side of heart distended with blood. Lungs congested. Organs otherwise healthy.

*Scalp wounds.*—Males 10; females 8. Died 1.

*Complications.*—Laceration of brain and pontine hæmorrhage 1; gunshot wound 1; fractured metatarsals 1; scarlet fever 1 (see Special Table); broncho-pneumonia 1; fractured ribs with surgical emphysema 1.

*Treatment.*—Suture. Removal of bullet 1; lumbar puncture 1.

*Fatal case. Scalp wound; laceration of brain; pontine hæmorrhage.*—S. T—, female, æt. 64, married. Patient shortly before admission had alighted from a tram, when she suddenly became giddy and fell down, sustaining a scalp wound. When admitted to hospital she was in an unconscious condition; pupils were equal, but contracted, and showed very slight light reflex, temperature was 96°, pulse 72. There was no evidence of fracture of the vault, and therefore wound was sutured. Nutrition was maintained by nasal feeding. Temperature rose within 12 hours to 101·8°, pulse rose to 104, and shortly afterwards to 120. On second day lumbar puncture was performed, and blood-stained cerebro-spinal fluid was withdrawn. Patient did not regain consciousness, and on 3rd day knee-jerks were both absent. Babinski's sign was obtained on the right side

and temperature was 102·8°. Death occurred at mid-day. P.M.—Effusion of blood beneath scalp in left frontal region. No fracture of skull bones. Dura in left frontal region bruised and infiltrated with blood. Left frontal lobe bruised and lacerated, the damage to brain extending for a depth of 1 inch. Similar, but less marked, changes were present in right frontal lobe and right occipital lobe. A hæmorrhage was present in left half of pons, plunging up the left pyramidal tract and slightly involving the right pyramid. Atheroma of cerebral vessels was very marked, the disease being particularly extensive in basilar artery. Heart fatty, aortic atheroma. Lungs œdematous. Kidneys showed chronic interstitial nephritis.

*Fracture of vault of skull; simple fissured.*—Females 2. Died 1. Parietal in both.

*Treatment.*—Exploratory incision 1.

*Fatal case. Fissured fracture of vault; laceration of brain.*—E. B—, female, æt. 53, housekeeper. On day before admission patient fell down some steps on to head, striking a flag-stone. She was unconscious when picked up, and was treated until next day by her doctor. On admission a large hæmatoma was present over left parietal bone. The patient was comatose, pupils small and equal, but inactive. Knee-jerks diminished. Slight movements in extremities were observed, the hands being occasionally clasped together. Double Babinski present. No ankle-clonus. Temperature 99·6°, pulse 68, respirations 20. There was doubt as to presence of depressed fracture, and, therefore, exploratory incision was made, but no depression was found. The following day pupils remained as before, no knee-jerks or other reflexes could be obtained, and no voluntary movements were made. Pulse was 60, respirations 16. No return of consciousness. Death on morning of 3rd day. P.M.—Fissured fracture of vault, beginning near left parietal eminence, passing backwards to lambdoid suture, then passing horizontally across right parietal bone and squamous portion of temporal bone, terminating on outer side of middle fossa. Brain showed laceration of cortex, most marked in right parietal and occipital regions, and to less extent on left side. Considerable subdural hæmorrhage. All organs healthy.

*Compound fissured fracture.*—Males 2; females 2. Frontal 2; parietal 3.

*Treatment.*—Suture of wounds 5.

*Compound depressed fracture.*—Males 3; females 2. Died 2. Parietal 4; frontal 1; gutter fracture 1.

*Treatment.*—Removal of fragments 3; trephining and elevation of fragments 2.

*Compound depressed fracture; trephining, elevation and replacement of fragments; recovery.*—W. K—, male, æt. 12, school. Shortly before admission patient was kicked on forehead by a horse. On examination a wound was present over left orbit about 2 inches in length; at the bottom of this a depressed portion of frontal bone could be felt. Patient was comatose but not quite unconscious. Vomiting occurred and the vomit contained blood. There was also bleeding from the nose and ecchymosis beneath the left conjunctiva,

with some proptosis. Pulse 60; temperature  $97.4^{\circ}$ ; respirations 20. The wound was immediately enlarged and the depression found to involve the left frontal bone and its supra-orbital ridge, with depression and splitting of the orbital plate. Several small portions of bone were removed, and the dura was found to be lacerated; some brain matter appeared in the wound; the larger portions of bone were replaced and the wound was partially closed, drainage being effected by two small gauze plugs. Next morning temperature  $98.6^{\circ}$ ; pulse 100; respirations 20. Patient was still drowsy and apparently in great pain. Wound remained clean, but examination of the eye on 4th day revealed a dull and lustreless cornea with considerable conjunctival extravasation. Vision still present. Temperature became normal and remained so. Pulse fell to about 80, and remained constant in rate though slightly irregular in tension. Examination of fundi revealed no evidence of papillitis on either side, and vision of left eye improved steadily and the scalp wound healed by first intention. No untoward symptoms were exhibited, and patient was discharged on 24th day.

*Fatal cases.*

1. *Compound depressed fracture of vault; meningitis.*—E. H—, female, *æt.* 8. History uncertain. Patient was knocked down by a two-wheeled cart, and it was thought that the wheel went over her. Consciousness was not lost till just before entering hospital. On admission the scalp from the middle of forehead to the posterior part of right parietal region was occupied by a hæmatoma. A deep cut was present in mastoid region, and through this a probe could be passed feeling rough edge of fractured bone. Brain matter was extruded from wound. Considerable irritability was present, and patient was sick shortly after admission. Pulse 70. Immediate operation was performed, a flap being turned down and the squamous portion of temporal bone was removed. The wound cleansed and drained. Patient remained in a comatose condition for some time after operation. Discs examined a week after admission showed no sign of optic neuritis. On 9th day temperature rose to  $103^{\circ}$  and remained between  $101^{\circ}$  and  $104^{\circ}$  for 6 days, the pulse rate varying between 110 and 130, having been above 100 ever since operation. On the 11th day patient was observed to be quite conscious but was somewhat irrational; the wound was discharging freely; some pain was felt in the left arm. The wound was explored at the end of a fortnight and a search for pus was made both beneath the dura and in the brain-substance, but none could be found. Temperature after the 2nd operation declined somewhat but still remained above normal; pulse rate became more rapid. Death occurred on 19th day. P.M.—Great laceration of brain was present at site of operation, and a large hernia cerebri occupied the gap in bony vault. Dura over fourth ventricle was adherent to surface of brain, and meningitis was present around chiasma and fissures of Sylvius. The laceration of cerebrum extended into descending horn of lateral ventricle, where acute inflammation was present. The infection had spread back along arachnoid *viâ* roof of cisterna magna, reaching the cord, down which the inflammation had spread some distance. The dura over upper part of cord was tense with subjacent pus. Other organs healthy.

2. *Compound depressed fracture of vault; laceration of brain.*—W. T—, male, *æst.* unknown (about 30), ostler. Patient had been grooming a horse

preparatory to its exhibition at a show, when he was kicked on the head, and brought up to the hospital with a compound depressed fracture of left parietal and temporal bones. The wound in the skull was round and about  $3\frac{1}{2}$  inches in diameter, the depressed fragment being completely detached from surrounding bone and driven inwards. The wound was bleeding freely and the left orbit was filled with blood. Hæmorrhage was also observed from left external auditory meatus, the membrane being ruptured. There was absolute unconsciousness, with no focal signs. Temperature was  $100.4^{\circ}$ , pulse 136, respirations 24 and laboured. No anæsthetic was administered; the wound was enlarged and the depressed bone was elevated and removed. The depressed fragment was comminuted, and the exposed dura was bulging and without pulsation. A small incision was made into this and a considerable subdural hæmorrhage was evacuated. The wound was partially closed. No improvement was exhibited either during or after operation; there was no return of consciousness, and within 6 hours temperature had risen to  $108.6^{\circ}$ , pulse was 140, respirations 24. Death. P.M.—On removal of brain considerable laceration of temporal lobe was found on left side. Extensive subdural hæmorrhage was present over the subtentorial portions. No blood was present in the ventricles; the roof of left orbit was comminuted and some of the fragments were depressed; there was no further fracture of skull bones. Stomach dilated, other organs healthy.

*Punctured fracture of parietal.*—Female 1. Died.

*Treatment.*—Trephining, and drainage of cerebral abscess.

*Punctured fracture of vault; cerebral abscess.*—E. B.—, female, æt. 14 months. Fourteen days before admission the child fell on to a box from which a nail was protruding, the nail penetrating both scalp and skull. No symptoms were observed until day of admission, when child had a fit, and, on examination, paralysis of the left oculomotor nerve was present, together with a hæmatoma over left parietal bone. An incision was made through the scalp and the condition found to be one of "Pott's puffy tumour." The parietal bone was perforated and pus was discharging through the aperture. The skull was trephined, the dura opened, and a further collection of pus found in the brain-substance. Drainage was effected. Temperature before operation had been  $100.4^{\circ}$ , pulse rate 120, and respirations 24. Shortly afterwards temperature rose to  $104^{\circ}$ , pulse rate became 200, and respirations 60. Death within 12 hours. P.M.—Wound had been through lower and posterior part of left parietal bone. The left occipital lobe was soft and diffuent, both lateral ventricles were inflamed, and purulent meningitis was present at cisterna magna and on base of brain in middle fossa. The viscera were normal.

*Fracture of outer wall of frontal sinus.*—Male 1. Surgical emphysema.

*Treatment.*—Nil.

*Fracture of vertex and base.*—Males 3. Died 3. Middle fossa 2; anterior, middle, and posterior fossæ 1; otitis media suppurativa and septic meningitis 1; fractured ribs and hæmothorax 1; fractured ribs and dislocation at acromial end of clavicle 1.

1. *Fractured vault and base; middle fossa; septic meningitis.*—W. A.—, male, æt. 6, school. Patient fell from roof of a stable, a distance of 12 feet, on

to head. On examination the child was in a comatose condition, but cried feebly on being examined. A small hæmatoma was present over anterior part of left parietal bone. No fracture of vault was detected. Bruising was present over left shoulder. Eyes were deviated to the left and limbs on right side exhibited spasmodic movements. Pupils equal and normal in size. Respirations quick and shallow, 28 per minute; pulse 116, temperature 96.4°. One hour after admission convulsions were observed on both sides of body, the right side moving more than the left. Pupils showed no change. Two hours later condition improved and patient was sleeping quietly, with improved respirations and pulse. Consciousness did not return until the next day; pulse rate was 110, respirations 24. Temperature rose in the evening to 100.4° and on night of third day to 103.2°, falling to normal the next morning. Condition remained unaltered for two days, temperature rising each night to about 103°. Examination of optic discs revealed some lack of definition at edges, but these were not swollen and the vessels appeared normal. No vomiting occurred, but on 8th day slight retraction of head was observed and patient complained of pain in head. He gradually became drowsy, and death occurred on 8th day, when temperature was 101.6°, pulse 126, respirations 36. P.M.—Linear fracture of frontal bone extending from coronal suture on left side an inch and a half to left of middle line, passing forwards and downwards to end on outer side of anterior fossa. There was also a fracture extending from same point in coronal suture, following its line and then passing obliquely across left middle fossa, and petrous bone terminating just external to internal auditory meatus. The portion of petrous bone internal to this fracture was loose and the fracture had opened up the tympanum, which was full of pus. The auditory nerve was partially severed, the facial had escaped. The tympanic membrane was intact. Slight hæmorrhage had occurred from branches of left middle meningeal artery. The base of brain and the cerebellum were covered with fibrinous exudation due to septic meningitis, and this had extended down the spinal cord. Lungs congested and oedematous; no sign of thoracic tuberculosis. Several calcified and caseous glands were present in the mesentery adherent to adjacent coils of intestine. No other signs of tuberculosis. Other organs healthy.

2. *Fractured vault and base; middle and posterior fossæ; fractured ribs; hæmothorax.*—W. G.—, male, æt. 61, builder's foreman. History uncertain; apparently patient fell off some scaffolding on to head. Only semi-conscious on admission. Considerable effusion of blood into both orbits, pupils unequal, light reflex absent. Depression of skull in left frontal region. Bleeding from nose and mouth: none from ears. Fracture of left malar bone in anterior part and also of left nasal bone. Knee-jerks brisk, plantar reflexes extensor. Chest on left side flattened. Breathing rapid and difficult. Incontinence of urine. Temperature 97.4°, pulse rate 52, respirations 28. In a few hours temperature rose rapidly to 104.4°, and death occurred within 18 hours of admission. P.M.—Comminuted fracture in left temporal region, with hæmorrhage beneath scalp and dura. From this fracture a fissure ran back to occipital protuberance and another across the pituitary fossa; brain bruised. Left ribs, from 2nd to 6th, were fractured, and the pleural cavity contained a quantity of blood. Lungs oedematous. Other organs healthy.

3. *Fractured vault and base; fractured ribs and other injuries.*—G. W—, male, æt. 59, viewer. Patient fell a distance of 15 feet on to back, and on admission was somewhat concussed. He was found to be suffering from fracture of ribs on left side. No other fractures were detected, respirations were laboured and rapid, temperature 99·4°, pulse 116. The following day well-marked signs of bronchitis were present all over chest. Respirations were 46, pulse 160, temperature had risen to 103°. Death on 2nd day. P.M.—Fissured fracture of skull commencing just behind left parietal eminence, extending vertically downwards across posterior fossa to terminate on left side of foramen magnum. Some meningeal hæmorrhage was present in this situation, and beneath the tentorium there was slight subdural hæmorrhage, due to laceration of left lobe of cerebellum. Extensive laceration of right frontal lobe, with subdural hæmorrhage covering frontal and parietal lobes. This had caused depression of frontal lobe. Dura mater intact. Subluxation of clavicle upwards at acromio-clavicular joint on left side. All ribs on this side were fractured except the 11th and 12th. The posterior portion of 8th rib had perforated the pleura, and the ribs from 2 to 9 were each fractured in two places. Lungs showed marked bronchitis and œdema. Left lung bruised. Left ventricle hypertrophied, slight atheroma of aorta. Kidneys granular, liver fatty.

*Fractured base of skull.*—Males 20; females 3. Died 8. Anterior fossa 4; middle fossa 14; posterior fossa 1; anterior and middle fossæ 1; middle and posterior fossæ 3. Scalp wounds 2; fractured radii 1; fractured humerus and ribs 1; fractured neck of femur 1; fractured femoral shaft 1; facial paralysis 1; facial weakness 1; septic meningitis 1.

*Treatment.*—Lumbar puncture 1.

#### *Fatal cases.*

1. *Fractured base; intradural hæmorrhage; fractured ribs, with hæmothorax.*—F. G—, male, æt. 45, labourer. Patient was driving a trap on day of admission, when the horse shied and he was thrown out on to his head. Admitted to hospital in semi-conscious condition, temperature 97·4°, pulse 68, respirations 24. Fractures of 3rd to the 10th ribs on right side. Bruise over right temple, and blood extravasation into right orbit. No bleeding from ears. Condition remained very little altered during first 2 days, though patient slowly regained consciousness and was able to take milk. On 3rd day temperature rose to 102°, pulse rate 104, respirations 40; and 2 days later he had a series of fits, which commenced with twitching of face extending to legs. Right-sided facial paralysis was also observed. Percussion-note on right side of chest was dull, and the breath-sounds impaired. Temperature rose to 104°, and death occurred on 5th day. P.M.—Extravasation of blood into right temporal muscle. Beneath this was a linear fracture running towards pterion, and then across base of skull, separating lesser wing of sphenoid from the frontal bone, terminating on right side of sella turcica. The opposite cerebral hemisphere was much bruised over temporal and adjacent part of frontal lobes, a large intradural extravasation covered the bruised area. No fracture on left side of skull. The fractured ribs had given rise to laceration of pleura and hæmothorax. The lung did not appear to be torn. Condition of liver, kidneys, and heart suggested alcoholism, the organs were otherwise healthy.



2. *Fractured base; middle and posterior fossæ; comminuted fracture of femur.*—F. P.—, male, æt. 42, cab-driver. Patient was driving his cab when an electric-car dashed into it, knocking over both cab and driver. He was picked up in an unconscious condition and admitted. On examination breathing was stertorous, and profuse hæmorrhage was occurring from nose and mouth, extending also into left orbit. A long scalp wound was present over left side of vertex. A comminuted fracture was present in upper 3rd of left femur. Death  $\frac{1}{2}$  hour after admission. P.M.—Fissured fracture of skull, commencing in left temporal region, passing across outer end of petrous bone, and thence along left side of posterior fossa, to terminate close to the internal occipital protuberance. A second fracture commenced in front of the first, close to the pterion, passing directly across base of skull, through lesser wings and body of sphenoid. This fracture, about 1 inch to right of middle line, turned backwards across right middle fossa, to terminate close to outer end of right petrous bone. The sphenoidal sinuses were full of blood. The fracture in femur was longitudinal, extending from just below the top of great trochanter to a point halfway down the inner border of shaft. The lower part of shaft was also fractured, and an oblique fracture was present in the femoral neck, extending from behind forwards and outwards. Slight subdural hæmorrhage and laceration over left temporo-sphenoidal lobe. Lungs œdematous, numerous old pleural adhesions. Pericardium adherent all over surface of heart, the adhesions being recent. Heart slightly enlarged.

*Fractured base, ribs, and humerus.*—J. C.—, male, æt. 68, gilder. Patient was run over by electric tram and dragged some distance along. Admitted with bleeding from nose and left ear, a large scalp wound, and fracture of ribs and left humerus. Patient was quite conscious and wounds were dressed, but temperature was 97.6°, pulse 124 and very feeble, respirations 24. Death occurred shortly after admission. P.M.—Linear fracture in lower posterior part of left parietal bone extending down to base and across petrous bone to terminate at sella turcica. Fractured bones not displaced. The fracture started beneath the scalp wound and considerable hæmorrhage had taken place into scalp. Dura bruised and considerable subdural hæmorrhage<sup>d</sup> present. Left temporo-sphenoidal lobe lacerated, the remainder of brain healthy. On both sides all the ribs from the 1st to the 7th were fractured just outside the costochondral articulations. The pleuræ contained a little blood. Aortic atheroma. Heart and lungs normal. Liver cirrhotic and fatty. Kidneys granular.

4. *Fractured base; anterior and middle fossæ.*—D. L.—, male, æt. 60, carman. Thrown from his van owing to horse bolting. Drunk at the time of accident. Admitted in a comatose condition; large scalp wound over left parietal and occipital regions. Hæmorrhage into left orbit, and from left nostril and ear. No fracture of vault detected. Wounds cleaned up. Calomel administered. Patient did not regain consciousness and died 30 hours after admission. P.M.—Head showed abnormal flattening in left temporal region and prominence over right eye without assignable cause. Extensive hæmorrhage into scalp tissue on left side. Two fractures of skull were found starting from a point close to left parietal eminence, 1 passing horizontally forward through the squamous portion of the temporal bone, across anterior fossa opening

the sphenoidal sinuses, involving the roof of left orbit, and travelling as far as the roof of the right orbit, sending a branch fracture forwards to the cribriform plate on the right side of the crista galli. The 2nd fracture passed through the petrous portion of left temporal, through the middle ear, across middle fossa, to end in the sella turcica. The portion of skull between the two fractures was slightly movable. Both temporo-sphenoidal lobes showed laceration of the cortex. Lungs oedematous. Heart dilated and hypertrophied. Coronary arteries atheromatous. Advanced atheroma of aorta.

5. *Fractured base; anterior fossa; septic meningitis; fractured neck of femur.*—F. J—, male, *æt.* 32, carpenter. Patient was perfectly well before accident, which was caused by a fall of 25 feet, though for a month previously he had been treated by a doctor for giddiness, and had occasionally been melancholy. Loss of consciousness did not occur for some time after accident. On admission patient was very noisy, face was bruised, and a large hæmatoma was present over the right eye. No bleeding from ear. Some ecchymosis was present also in left orbit. There was a fracture of femoral neck on left side with 1 inch shortening. Reflexes apparently normal. A long outside splint was put on affected leg and morphia was injected. On 4th day patient showed some signs of consciousness and became less violent. Leg was treated by application of extension and plaster of Paris splint. Condition remained good for nearly 4 weeks, the femur at the end of this time being treated by massage, the blood extravasation in orbits had disappeared and patient appeared to be getting on well, but on 29th day the temperature, which had previously been normal, suddenly rose to 102° and patient became semi-conscious, very noisy, and restless. It was observed that a fracture of the nasal septum had occurred, the deformity being noticeable when the extravasation had subsided. The next day patient was still very restless, knee-jerks were brisk, ankle-clonus was obtained on right side and Babinski's sign on left. No vomiting occurred; some right-sided proptosis was observed, more marked on left side; the pupil on this side reacted only sluggishly to light. Pulse 108. On 32nd day temperature, which had been steadily rising, reached 106·2° and patient died in comatose condition. P.M.—Extensive fracture in anterior fossa, with comminution of both orbital plates. On left side fracture crossed upwards to the pterion. The fracture involved the posterior part of cribriform plate. A fracture was also present across anterior part of right middle fossa. No obvious connection between these fractures. The margin of right orbit was also fractured. The right cavernous sinus was occluded by clot and beginning to suppurate. Ethmoidal sinuses contained pus. Acute septic meningitis was present over base of brain, spreading along vessels towards vertex. Pus was present in all the ventricles. Lungs bronchitic and oedematous. Extra-capsular fracture of femoral neck united.

6. *Fractured base; posterior fossa; laceration of brain.*—W. P. L—, male, *æt.* 40, occupation unknown. Shortly before admission patient was knocked down by a tramcar, and fell on to the back of his head. He did not lose consciousness and on admission there was a scalp wound just above the occipital protuberance; the right pupil was smaller than the left and neither reacted to light. Some cerebral irritation was present, and patient could not reply to

questions. Vomiting occurred once, and the vomit contained blood. Knee-jerk present on left side, absent on right. Babinski's sign was also present on left side. On evening of day of admission lateral movements of head were observed, and on next day spasmodic movements of left arm. Patient became absolutely unconscious shortly after admission. Bowels were open normally once, and later incontinence of both urine and feces developed. Temperature, which on admission was 100°, rose the next day to 102·6°, when the pulse rate was 80, respirations 20. Temperature remained high and pulse rate was over 100, respirations became laboured and stertorous. On 3rd day temperature reached 104°, and remained so for a few hours before death. P.M.—Skull showed bruise over right occipital bone, with fracture extending from right side of foramen magnum to a point just above the torcula Herophili, 1 inch from middle line. Right lobe of cerebellum was lacerated, and the brain covered with blood-clot. Left frontal lobe showed laceration by contre-coup and was covered by a large hæmorrhage, extending to left optic thalamus. Blood was present in both ventricles. Arteries at base of brain atheromatous. Both pleural sacs were obliterated by adhesions. Lungs œdematous and emphysematous. Bronchial gland showed calcification. Heart-muscle flabby. Aorta atheromatous. Stomach was the seat of numerous soft growths limited to mucosa. These, microscopically, were adenomata.

7. *Fractured base ; middle fossa.*—W. E—, male, æt. 45, plumber. Patient admitted in unconscious condition, having fallen 25 feet on to head. No reply could be obtained to questions; bleeding occurred from the nose and right ear, but no cerebro-spinal fluid was present in the discharge. No signs of paralysis of limbs. Knee-jerks present and equal. Pupils reacted to light, no alteration in size. No subconjunctival hæmorrhage, no signs of external injury on scalp. Right ear filled with blood, which apparently came through ruptured membrana tympani. Temperature 97°, pulse 100, respirations 28. Ear irrigated with hydrogen peroxide and saline. Mastoid ecchymosis on right side observed on 3rd day, when patient was still quite unconscious and would not take food. Pulse 64, pupils normal, no further hæmorrhage. Patient then became restless, and nourishment had to be maintained by nasal feeding. On 5th day lumbar puncture was performed, and 9 drms. of clear fluid were withdrawn. No difference in condition was exhibited and death occurred next day. P.M.—Deep bruising in right mastoid region. Considerable hæmorrhage beneath scalp in and over the right temporal muscle. Fracture started in right temporal fossa, above and behind auditory meatus, across tympanum, and then along anterior surface of petrous bone to terminate at dorsal sellæ. The tympanum was full of blood and its roof was depressed into its cavity. The temporal lobe was lacerated, and blood had been effused into descending cornu of right lateral ventricle. On the left side of brain the anterior portion of temporal lobe and adjacent part of frontal were reduced to pulp. A hæmorrhage 1 inch in diameter was present in the region of Broca's convolution. A considerable intradural hæmorrhage was present over this portion of brain, while on the right side there was a small extradural hæmorrhage over the petrous bone. Serous sacs healthy, lungs congested and œdematous, other organs healthy.

8. *Fractured base ; middle and posterior fossa.*—A. W. B—, male, æt. 27.

Knocked down by tramcar and brought to hospital in unconscious condition. Pulse 54, temperature 96°. Knee-jerks sluggish, but equal. Small scalp wound over outer side of left orbital margin. Slight depression felt beneath this. Some bleeding from nose, pupils unequal, very slight corneal reflex. Two hours after admission respirations became very slow and cyanosis was present, the patient being almost pulseless. Artificial respiration was attempted, and injections of strychnine and ether were given, but with no good result. The pulse continued for some minutes after respirations had ceased. P.M.—Fracture of left middle fossa, starting at lesser wing of sphenoid, and reaching foramen laterum medium of right side. This was continued backwards across apex of right petrous bone, and traversed the right occipital fossa to end 1 inch above level of base. No extradural hæmorrhage, but extensive intradural bleeding over left half of brain, covering temporo-sphenoidal and frontal lobes, which were lacerated. The right occipital lobe contained extravasated blood. Interior of cerebrum normal. Lungs oedematous. Other organs healthy.

*Bullet wound of skull.*—Male 1. Died. Fracture of vertex and base.

*Treatment.*—Exploration of wound.

*Bullet wound of skull and brain.*—E. G. J.—, male, æt. 24, clothier. Patient was found shot, on July 21st, in second class carriage at Vauxhall Station. Operation was performed 3 hours later. Exploration of the wound was carried out but bullet could not be found. Death occurred 3 hours later. P.M.—Wound of entry, a clean-cut hole, was present in right temporal region. No aperture of exit was found on skin of opposite side. Hæmorrhage into both orbits had occurred, and subcutaneous tissue all over scalp was full of blood. From the aperture of entry a fracture extended in the parietal bone, vertically upwards to the vault and another forward involving the frontal bone and its external angular process. On the left side, in posterior part of parietal bone, was a comminuted fracture through which brain matter was protruding, though the skin remained intact. Base of skull showed fracture across right middle fossa, ending at sella turcica. Right and left anterior fossæ showed transverse fractures, and both orbital plates were comminuted. The brain was covered with blood-clot. The bullet had entered the lateral surface of right temporo-sphenoidal lobe, and had ploughed a large hole through brain-substance beneath the corpus callosum, passing upwards and backwards, emerging through left surface of cerebrum penetrating the left parietal bone, and remaining in subcutaneous tissue on left side of scalp. The viscera were healthy.

*Fracture of bones of face; nasal bones.*—Male 1. Surgical emphysema.

*Maxilla.*—Male 1; female 1. Compound 1; scalp wound 1.

*Treatment.*—Suture of wound 2.

*Mandible.*—Males 2. Compound externally 1.

*Treatment.*—Gutta-percha splint 1; bandage 1.

*Cut throat.*—Males 8; females 2. Died 1. Thyro-hyoid membrane divided 2; larynx opened 2; superficial 6.

*Treatment.*—Suture in all; laryngotomy 3.

*Fatal case.*—*Cut throat, through thyroid cartilage; œdema of lungs.*—W. O—, male, æt. 51, blacksmith. Patient was admitted at 7 a.m. on September 19th with incision about 6 inches long in neck. The wound was self-inflicted and it involved the thyroid cartilage, but no vessels were bleeding except a branch of the superior thyroid artery. Laryngotomy was performed and the thyroid cartilage was sutured. Patient was very noisy and delirious and had considerable difficulty in respiration; temperature after operation was 100°, pulse rate 180, respirations 40. Feeding was carried out by œsophageal tube; strychnine and oxygen were both used but death occurred on 3rd day. P.M. Edges of wound ragged and unhealthy. The epiglottis was uninjured, and the wound had not communicated with the pharynx or damaged any large vessel. Trachea healthy. Pleuræ showed a few old adhesions; lungs highly œdematous but showing no consolidation. Some aortic atheroma. Liver fatty. Other organs healthy.

## INJURIES OF THORAX.

*Contusions of chest.*—Females 2.

*Treatment.*—Rest.

*Bullet wounds of chest and arm.*—Female 1. Died. Homicidal.

*Bullet wounds of chest and arm; homicidal.*—E. S—, female, æt. 43, married. Brought up by police at 11 p.m. with report that four shots had been fired at patient by husband. On admission patient was in great pain and suffering from shock. A small wound was present over the sternum half an inch to left of middle line and a quarter of an inch below the upper border of the manubrium. This was probed and extended for no great depth. A wound was also present on inner and anterior aspect of left arm an inch and a half above the bend of elbow, a wound of exit being present on posterior and outer aspect of this arm four inches above elbow. There was also a graze on right buttock. The clothes showed corresponding holes, the margins of which were singed and blood-stained. Condition of patient was too bad to allow of operation; pulse 112, respirations 30. Stimulants were administered, but patient only lived about 24 hours, temperature rising rapidly and reaching 103° just before death. Inquest. No P.M. report.

*Fractured ribs.*—Males 10; females 2. Died 3. Surgical emphysema 1; pneumonia 2; fractured scapula 2; contusion of kidney 1; scalp wound 1; ruptured diaphragm 1; fractured vault 1.

*Treatment.*—Bandage or strapping in all.

*Fatal cases.*

1. *Fractured ribs and fractured vault.*—J. W—, male, æt. 63, gas superintendent. Patient had been treated for renal and cardiac disease for some years, but had not been subject to fainting fits. Apparently, for no explained reason,

patient fell down two steps at railway station with right arm beneath him. On admission patient was breathing with some difficulty. A large subconjunctival hæmorrhage was present and slight epistaxis; six ribs were broken on the right side midway between axillary and scapular lines. Patient was very restless. Temperature 96·8°, pulse 88, respirations 28. Urine contained a large quantity of albumen. Amount passed 40 oz. in 24 hours. Great restlessness persisted and patient had to be restrained. On 5th day respirations were of Cheyne-Stokes type and pulse rate was 100. Morphia and heroin were administered to keep the patient quiet. At the end of a fortnight patient was much brighter, was not restless, and breathing was much easier. Temperature sub-normal. At the end of 4 weeks patient complained of pain "inside," and mental confusion and restlessness reappeared. This persisted until death, which took place on 33rd day. P.M.—Body well nourished. No external signs of violence. Bruise in deep part of scalp over right frontal region. Fissured fracture of vault extending across right frontal bone backwards to parietal bone. A fracture was also present above margin of right orbit, extending into its roof. Brain and membranes not bruised. Slight œdema of membranes and some wasting of convolutions was present. Old pleural adhesions were present on right side, at base, and in axillary region. The ribs fractured were the 4th to the 10th, and a considerable quantity of callus had been formed. Lungs showed extensive hypostatic basal pneumonia. Heart hypertrophied, coronary arteries slightly atheromatous, valves competent. Extensive aortic endarteritis and dilatation of first part of thoracic aorta. Kidneys granular. Arteries throughout body thickened.

2. *Fractured ribs.*—F. T—, male, æt. 72, button-maker. Two days before admission patient fell downstairs, alighting on his right side. He suffered considerable pain and went to bed. The pain increased and respiration was laboured; therefore patient was brought to hospital, and on examination great tenderness was present over right side of thorax, several ribs being fractured. Great pain was caused by deep inspiration, and respirations were shallow, rapid, and difficult. A flannel bandage was applied, and a tent and steam kettle were used, as well as oxygen. Condition showed slight improvement on 3rd day, but pulse rate was 150 and respirations were still difficult. Sputum of pneumonic character was expectorated, and patient was extremely restless. Condition after this became progressively worse, and death occurred on 4th day. No P.M. report.

3. *Fractured ribs; ruptured diaphragm with large hernia; fractured clavicle.*—J. W—, female, æt. 48, married. Patient fell out of second floor window on day of admission. On examination there was a fracture of the left clavicle in the usual situation, and the 5th and 6th ribs on this side were fractured; surgical emphysema present. Patient showed signs of concussion; pupils and knee-jerks were normal. Percussion-note on left side of chest dull. Patient was very stout, and examination was difficult. No expectoration of blood. Temperature 98·2°, pulse 120, respirations 48. Stimulants and oxygen were administered, and the left arm was bandaged to the chest-wall, but patient only survived for 24 hours. P.M.—External bruises on legs, left arm, and side of chest. Fractured ribs were the 1st to the 6th on the left side, and the upper 3 on the right. Left clavicle fractured in its middle 3rd. Left lung collapsed, heart and pericardium displaced to right; occupying the lower half of left

pleural cavity were the stomach, a portion of transverse colon and great omentum, together with a small part of the left lobe of liver. A large recent rent was present in the left leaf of the diaphragm, mostly through the muscular portion, through which these viscera were herniated. There was no obstruction to the flow of intestinal contents, though the stomach was distended. No peritonitis. Perirenal tissue was bruised on both sides, kidneys uninjured. Spleen presented with 1 small superficial laceration. Liver was not ruptured. There was a little blood free in the peritoneal cavity, the pelvis containing about 1 oz. Other organs healthy.

---

## INJURIES OF SPINE.

*Contusion of back.*—Males 4.

*Fracture of spine.*—Males 2; female 1. Seventh cervical transverse process 1; bodies of 2nd and 5th lumbar vertebrae with contusion of lung 1; 12th dorsal spine 1.

*Treatment.*—Rest in all.

*Dislocation of spine.*—Males 2. Died 1. Forward subluxation of lateral process of atlas 1; subluxation of 1st dorsal body 1.

*Treatment.*—Reduction under anæsthetic 1; rest and extension 1.

*Subluxation of 1st dorsal vertebra; paralysis; cystitis.*—R. B—, male, æt. 26, acrobat. About mid-day on day of admission patient, whilst practising, took hold of an electric light bracket, the wire of which was not properly insulated. He found himself unable to let go, and called for help. Another member of the troupe climbed up and pulled him by the leg with such force that he fell, the bracket also being pulled down. Patient fell about 20 feet to the ground, striking the edge of a table in his fall. He did not lose consciousness, but complained of pain in the back of his neck, and found he could not move his legs. Slight bleeding occurred from mouth and nose. On admission a strong healthy-looking man with complete anæsthesia below the level of 4th ribs. No zone of hyperæsthesia. Sensation present in arms, except along ulna border. Complete paralysis of legs and lower part of trunk, with intercostal muscles. Reflexes absent. Diaphragm not involved. Some power in arms, fingers moved slowly and not to full degree. Priapism present. Retention of urine and incontinence of feces. On examination of back a distinct depression was felt at level of 4th cervical spine. Patient was placed on a water-bed, and slight extension was made on the head by means of a bandage fixed around head and to the bed. Urine drawn off twice daily. On 2nd day less power was exhibited in arms, only flexion and extension of fingers being present. Priapism, which had been marked in the early stages, disappeared on 4th day, and some return of power in the arms was exhibited. The spitting of blood-streaked sputum, which had occurred during the first few hours after admission, ceased, but no definite improvement took place. Bladder and rectum remained as on admission, and on

8th day well-marked acute cystitis was present, the urine containing blood and pus. This was associated with a rise of temperature to 103.4°, the cystitis showed no signs of improvement, but on 13th day there was some return of sensation to touch with a pin on soles of feet. No alteration of muscular power. Lungs became congested at their bases, and patient grew progressively weaker. Some fever had been exhibited ever since the 2nd day. Death occurred at the end of a fortnight. P.M.—The body of 1st dorsal vertebra was slightly displaced backwards. No other deformity or fracture was found in spinal column. A good deal of hæmorrhage was present between spinal muscles at level of upper dorsal vertebræ, and at this level also there was a considerable amount of extradural hæmorrhage, but there was no intradural hæmorrhage, and to the naked eye the cord was normal. Skull and its contents were healthy. Heart and pericardium normal. Lungs showed intense congestion and œdema, with abundant mucus in the bronchi. Consolidation was present in lower part of right upper lobe. Abdominal organs, with exception of bladder, were normal; the bladder showed advanced cystitis.

*Fracture, dislocation of spine.*—Males 3. Paraplegia 1; Pott's fracture 1; fracture of odontoid process 1; body of first lumbar 1; 12th dorsal, 1.

*Treatment.*—Rest.

## INJURIES OF ABDOMEN AND PELVIS.

*Contusions.*—Males 10. Fat necrosis, 1.

*Treatment.*—Exploratory celiotomy 1. Rest in the remainder.

*Lacerated wound of abdominal wall.*—Male 1; female 1. Suppurating 1.

*Perforating wound of abdomen.*—Female 1. Perforation of small bowel and mesentery. Prolapse of intestine.

*Treatment.*—Celiotomy, resection, and axial anastomosis.

*Perforating wound of abdomen; ruptured small intestine and mesentery; resection and axial anastomosis; recovery.*—E. C—, female, æt. 10. A healthy child who fell on day of admission about 18 feet, becoming impaled on the spikes of iron railings. Patient remained in this position for two or three minutes before she was lifted off. On admission an oblique wound 2 inches long was present passing through the whole abdominal wall, its centre being 3 inches below and to the left of the umbilicus. Through this opening about 8 inches of small intestine was prolapsed, having 2 punctures in its wall. Immediate operation was performed, the abdominal wound was enlarged, and 4 inches of small intestine were resected, and circular anastomosis was performed. A further puncture in the intestinal wall was closed with Lembert's sutures. The mesentery of the portion of gut resected was lacerated. Abdominal wound sutured in layers. Patient experienced a good deal of pain after operation and rectal feeding was carried out for a few days. The bowels were opened by enema on 2nd and 3rd day, and naturally on 4th day. Pain and abdominal tenderness



gradually diminished, and mouth-feeding was begun on 4th day. Wound healed by first intention, and patient was discharged on 18th day.

*Ruptured duodenum and outer coat of colon.*—Female 1; died.

*Treatment.*—Cœliotomy and attempted suture, with subsequent posterior gastro-jejunostomy, and suture of stomach and duodenum.

*Ruptured duodenum and colon.*—M. W—, female, æt. 30, married. Thirty-six hours before admission patient, who was carrying a baby, fell over a cat and struck the right side of her abdomen against the banisters. On admission severe pain was present in right subcostal region, the abdominal wall was rigid, the rigidity being most marked in right rectus. Pulse rate 136, temperature 98°, respirations 36, considerable shock present. Immediate cœliotomy was performed through right rectus. Some peritonitis was present in neighbourhood of duodenum, which was ruptured and leaking in its second part. The hepatic flexure colon was also ruptured posteriorly, the rent involving only its external coats. Suture of the ruptures was attempted, but found to be impossible. Drainage-tubes were therefore secured down to site of leakage and the abdominal wound closed. Condition after operation was fairly good for several days. The discharge from wound was abundant and the dressings were stained with bile and had a faecal odour. Slight vomiting occurred on 3rd day but condition improved, and on 6th day temperature was 97°, pulse 112, respirations 24. It was therefore decided to perform further operation and the abdomen was reopened, the rupture of duodenum was closed, the pylorus was divided across, and the free ends of stomach and duodenum were then closed by suture, and a posterior gastro-jejunostomy was performed. For 24 hours patient remained in fairly good condition, but at the end of this time pulse rate rose to 120, frequent vomiting occurred and there were signs of spreading peritonitis. Death occurred on 9th day. P.M.—Acute peritonitis was present, most marked on right side. Duodenum ruptured at junction of first and second portions on posterior wall, the rupture being 1 inch in length. Adjacent portion of peritoneum showed adhesions with small collections of pus. All the suturing was sound. Ascending colon showed only laceration of outer coat. Liver slightly fatty. Recent vegetations on mitral valve.

*Contusion of kidney.*—Male 1. Raynaud's disease.

*Treatment.*—Rest.

*Ruptured kidney.*—Male 1. Pneumonia.

*Treatment.*—Rest and calcium chloride.

*Ruptured liver.*—Male 1. Died. General peritonitis.

*Treatment.*—Cœliotomy, gauze plugging.

*Ruptured liver; peritonitis.*—H. B—, male, æt. 18, clerk. Patient was riding a bicycle when he was knocked over by a cart, the front wheel of which passed over his abdomen. On admission patient was pale and somewhat apathetic. A small abrasion of the skin was present  $1\frac{1}{2}$  inches above the right anterior superior iliac spine. Extreme tenderness was present on right side of abdomen, patient resenting examination of this area. Slight shifting dullness was present in right flank. Urine normal. Temperature 97.6°, pulse 80,

respirations 20. Temperature rose in 6 hours to 100·4; the pulse rate did not show corresponding rise. Condition throughout the 2nd day showed little variation. It was difficult to estimate the amount of abdominal pain, the most noticeable feature being the right-sided tenderness. Palpation of abdomen caused muscles to be rigidly contracted, and patient was so restless that examination was difficult. On 3rd day abdominal rigidity became more marked and respiratory movement was absent. Vomiting occurred 3 times and no action of bowels had occurred since admission. Percussion note resonant. In 12 hours pulse rate rose from 84 to 104. Abdominal exploration was therefore performed and on opening the peritoneum a large quantity of blood escaped. A fissured rupture was felt on the right border of liver. Condition of patient was bad, therefore infusion was carried out during operation, completed by plugging with gauze. Patient did not survive many hours. Culture from peritoneum yielded pure growth of *Bacillus coli*. P.M.—Upper air and food passages normal. Left lobe of thyroid showed hæmorrhagic extravasation in its lower part. No sign of injury of neck to account for this. Right pleural sac showed slight fibrinous pleurisy at base. The left contained some bloody serum, as also did the right sac and the pericardium. Lungs congested. Lower lobes broncho-pneumonic; 7th, 8th, and 9th ribs on right side were fractured. Pleura had not been wounded. General peritonitis was present, the liver showed transverse rupture of right lobe, extending through nearly the whole thickness of organ. The line of rupture was occupied by a broad lamina of recent clot, whilst the liver-substance above showed areas of necrosis. Gall-bladder and bile-passages healthy. Other organs healthy.

*Fracture of pelvis.*—Males 5; females 2. Died 2. Compound into vagina 1; pubic rami 3; symphysis 1; symphysis and sacro-iliac joints 1; pubic rami and sacro-iliac joints 1; fractured ribs 1; dislocation at superior tibio-fibular joint 1.

*Treatment.*—Exploratory incision 1; suture of wounds 2. Rest without splints in all.

#### *Fatal cases.*

1. *Fractured pelvis and ribs, with rupture of lung, liver, and left kidney.*—T. H—, male, æt. 46, house-painter. Shortly before admission patient fell 15 feet on to the ground. He was found in an unconscious condition and was unable to give an history of the accident. On examination, breath smelt strongly of alcohol, pupils were contracted, and light reflex was absent. There were no signs of fracture of skull or injury to scalp. The tongue had been bitten in 3 places and mouth was filled with clot. Several ribs were found to be fractured on both sides of chest. Surface of body was very cold, and pulse rate was 124 and very feeble. Infusion was performed with 5 pints of saline and the laceration of tongue was sutured. Death occurred within a few hours. P.M.—On right side the ribs were fractured from the 2nd to the 9th. The lung had been pierced and lacerated. The symphysis pubis was separated and both sacro-iliac synchondroses were partially separated but still adherent posteriorly by their interosseous ligaments. Pelvic organs not injured apart from ecchymosis. Peritoneum contained some blood. Superficial rupture of right lobe of liver in 2 places. A large left-sided retro-peritoneal hæmatoma

in connection with rupture of a hydro-nephrotic kidney, within which was a small branched calculus which had caused hydronephrosis of the lower half of kidney. The upper half was normal. It was this hydronephrotic sac which had ruptured, and the rupture admitted 3 fingers easily. Some ecchymosis of intestines and mesentery. Other organs healthy.

*Fractured pelvis, compound into vagina.*—C. M. S.—, female, æt. 22 months Child was admitted shortly after having been run over by a heavy van, which passed over right side of pelvis and right leg. On examination, separation of the right sacro-iliac synchondrosis was present together with fracture of rami of left pubic bone. A large hæmatoma was present over dorso-lumbar region of spine; the head of right fibula was found to be dislocated upwards and backwards behind outer tuberosity of tibia. A lacerated wound was present on inner side of the same leg and another on the foot. The vagina, with vestibule, urethra, and clitoris, were torn from their attachments on left side; the perineum was also lacerated. Temperature was 98°; pulse rate 164. The wounds were cleaned up and a winged catheter was tied into the bladder. Temperature shortly after this rose to 103·2°, pulse rate 148, respirations 40. The following day head was observed to be slightly retracted, and the child occasionally uttered a piercing cry, though previously to this she had been perfectly conscious, and was then seized with convulsions in limbs and had great difficulty in breathing. This muscular spasm relaxed, but consciousness was not regained for about 12 hours. Temperature on 3rd day reached 105·8° and the wound on leg appeared gangrenous, while that in vagina was suppurating. Head still retracted, occasional cry, and extreme restlessness. For 24 hours temperature remained above 104° and was 105·2° when death occurred. P.M.—Ligaments of superior tibio-fibular joint completely ruptured, fibula displaced upwards and backwards. Complete separation of right sacro-iliac joint, with slight separation of left synchondrosis anteriorly. Horizontal and descending rami of left pubic bone both fractured. Organs healthy.

*Injuries of external genitalia.*—

*Rupture of urethra.*—Males 2. Membranous 1. Partial, mucosal rupture 1.

*Treatment.*—Perineal suture 1. Rest 1.

*Wounds of scrotum.*—Males 3. Lacerated 1; bullet wound 1.

*Treatment.*—Suture 2; extraction of bullet 1.

*Wound of prepuce.*—Male 1. Incised.

*Treatment.*—Dressings.

## INJURIES OF UPPER EXTREMITY.

*Wounds and contusions.*—Males 20; female 1. Crushed hand, emphysematous gangrene 1.

*Treatment.*—Amputation of fingers 3; amputation of forearm 1. Cleansing of wounds in all.

*Crushed hand; emphysematous gangrene; Bacillus aerogenes capsulatus amputation; recovery.*—J. T—, male, æt. 32, machine hand. Patient's right hand became crushed in machinery a short time before admission. The fifth metacarpal was fractured at its base and the skin and palmar fascia were stripped up as far as the head of metacarpal bones. On day of admission the hand was washed up aseptically and the wound closed with a few stitches. The same evening temperature rose to 103.2° and pulse rate 96. Temperature remained high until 3rd day, when gangrene with emphysematous crackling was present as high up as the wrist. Amputation through lower third of forearm was performed and the wound partially closed with 3 stitches. Temperature fell to normal, but was over 103° next evening, and the following day discharge was so abundant that stitches were removed and after this temperature fell to 99°, rapidly became normal and remained so. Healing of wound was slow, but at the end of 8 weeks it was nearly closed and patient was discharged on 26th day. Bacteriological report: Films from fluid in blebs show bacilli resembling the *Bacillus aerogenes capsulatus* and large numbers of other organisms. Anaerobic culture: *Bacillus aerogenes capsulatus*.

*Cut tendons.*—Males 2; females 3. Extensors 3; flexors 2.

*Treatment.*—Suture in all.

*Cut tendons and nerves.*—Males 4; female 1. Readmission 1; median 3; ulnar 1; median and ulnar 1.

*Treatment.*—Suture; 2 operations in one case.

*Fractures.*

*Fracture of clavicle.*—Male 1; females 2. Fracture of scapula and dislocation of radius 1; fractured ribs 1.

*Treatment.*—Reduction of deformity, rest, 1; Sayre's strapping 2.

*Fracture of humerus.*—Males 10; female 1. Compound 1; compound comminuted 1; supra-condylar 4; T-shaped into elbow-joint 2; comminuted 2; forward dislocation of ulna 1; surgical neck 1; middle third 1; injury to musculo-spiral nerve 1; ankylosis of elbow 1; also fracture of femur and tibia 1; phimosis 1.

*Treatment.*—Cleansing of wound, extension, 1; amputation through middle of humerus 1; open reduction of supra-condylar fracture 2; splints in the remainder.

*Separation of humeral epiphysis.*—Male 1. Lower epiphysis.

*Treatment.*—Partial reduction by open operation.

*Fracture of olecranon.*—Males 3. Fracture of head of radius 1.

*Treatment.*—Wired 1; plaster splints 2.

*Fracture of radius and ulna.*—Males 4. Compound comminuted 1; comminuted with compound dislocation at inferior radio-ulnar articulation 1; crushed thumb 1; cut hand 1.

*Treatment.*—Amputation through forearm 1; cleansing of wound and reduction 1; splints in all.

*Colles' fracture.*—Females 2. Compound 1; fractured ribs 1.

*Treatment.*—Cleansing of wound and reduction 1; massage 1.

*Dislocations of humerus.*—Male 1; female 1. Both subcoracoid. Fracture of great tuberosity 1; history, 6 days, 1; 8½ months 1.

*Treatment.*—Open reduction, with pegging of great tuberosity 1; massage and passive movements 1.

*Dislocation of radius and ulna.*—Males 2. Died 1. Compound 1; backwards, with fracture of radial head 1.

*Treatment.*—Excision of elbow in both.

*Fatal case. Compound fracture—dislocation of elbow; pneumonia.*—J. C—, male, æt. 49, locomotive inspector. Patient had sustained injury by jumping off engine which was in motion. The humerus was fractured just above the condyles and both radius and ulna were displaced backwards, the bones being visible through a wound over back of left elbow. Patient was immediately anaesthetised and excision of the joint surfaces was performed, the wound being drained with tubes and the arm put up at right angles. Condition after operation was fairly good, but the same evening there were signs of collapse; temporary improvement was obtained by injections of strychnine, and subsequently by saline infusion. Temperature on 2nd day rose to 100°, but fell below normal that evening, rising the following morning to 102·4°; respirations 60 per minute. A small amount of viscid, blood-stained sputum was brought up, and signs of consolidation of lower right lobe of lung were present. Wound of arm remained healthy, but patient died on third day. P.M.—Both lungs intensely congested. Right lung œdematous, the lower lobe on left side completely solid, showing condition of red hepatisation. Upper lobe showed similar changes. A few atheromatous patches on mitral valve; aorta atheromatous. Other organs healthy.

*Dislocation of thumb.*—Male 1. Backwards at metacarpo-phalangeal joint.

*Treatment.*—Open reduction.

---

## INJURIES OF LOWER EXTREMITY.

*Wounds and contusions.*—Males 8; female 1. Readmission 1.

*Bullet wounds.*—Males 2; female 1.

*Treatment.*—Extraction of bullet 2.

*Strain of tendons.*—Male 1; female 1.

*Treatment.*—Rest.

*Partial rupture of tendo-Achillis.*—Male 1.

*Treatment.*—Rest.

*Crushed foot.*—Males 2. Died 1.

*Treatment.*—Aseptic cleansing, with subsequent amputation of leg, 1; of toes 1.

*Fatal case. Amputation; hypostatic pneumonia.*—G. H—, male, æt. 49, machine-minder. Foot was crushed in a printing machine, and this resulted in

compound comminuted fracture of phalanges of first and second toe on left side. Foot was cleaned up aseptically on day of admission. With the exception of slight daily rise of temperature convalescence went on satisfactorily until the end of the week, when the skin on dorsum of foot was gangrenous. Wound became offensive, and was treated with hot dressings. Temperature suddenly rose to 103.6° on 12th day, and incision evacuated a good deal of pus. Temperature did not remain down for long but again rose to 103°, and remained high until the end of 3rd week, when amputation was performed at the junction of lower and middle thirds of leg. Condition improved somewhat after the operation, but stump remained in an unhealthy condition and patient exhibited signs of bronchitis. Bed-sores developed. At the end of 6th week patient became drowsy, and frequently wandered in his speech. Temperature remained about 102°, and both legs were oedematous. Abdomen was distended, and the distension was attributed to paralysis of muscular coats of intestine. Some relief was obtained by administration of a turpentine enema. Stump was treated by daily baths. Condition did not improve, and death occurred on 46th day. P.M.—Flaps of amputation were suppurating, but not gangrenous. Abdomen greatly distended, the distension being due to enormous inflation of transverse colon. Stomach and duodenum of normal size. No peritonitis, and no lesion of bowel. Lungs congested and oedematous. Pleural adhesions on both sides, and the scars of obsolete phthisis at both apices. Liver fatty.

*Crushed toes.*—Male 1; hallux, dry gangrene.

*Treatment.*—Amputation of hallux.

*Hæmatoma of buttock.*—Male 1.

*Treatment.*—Rest.

*Sprained ankle.*—Male 1; female 1.

*Treatment.*—Plaster splint 1; massage 1.

*Lacerated wound of knee-joint.*—Males 2.

*Treatment.*—Aseptic cleansing and suture; subsequent Thiersch's graft 1.

*Punctured wound of knee-joint.*—Male 1.

*Treatment.*—Arthrotomy; lavage; drainage.

*Traumatic synovitis of knee.*—Male 1.

*Treatment.*—Massage.

*Rupture of popliteal artery.*—Males 2.

*Treatment.*—Amputation through lower third of thigh in both cases.

1. *Ruptured popliteal artery; amputation; recovery.*—G. Y—, male, æt. 47, carman. Two days before admission patient fell off his van, the weight of which was 16½ cwt., and the wheel passed over both knees. On examination the right leg showed slight bruising, while the left was discoloured on its posterior and internal aspect, both below and above the knee-joint. There were signs of fluid in the joint, and a large hæmatoma was present on its internal aspect. No evidence of fracture. The foot and lower part of leg were cold, and no pulsation could be felt in either anterior or posterior tibial arteries. A large bleb was present on sole of foot. Patient had walked for some time after the accident. The discoloured area exhibited incipient gangrene, which gradually

increased, and on 6th day amputation was decided upon. This was carried out through lower 3rd of thigh by means of a long anterior flap. The rupture was small, admitting a large probe. Its situation was on posterior surface of popliteal artery  $1\frac{1}{4}$  inches above its bifurcation. The internal and middle coats were both extensively damaged for about  $\frac{3}{4}$  of inch around the rupture. A small amount of recent clot was present in both artery and vein, and there was extensive extravasation of blood surrounding the vessels. Progress was uneventful, and patient was discharged on 25th day, with the wound nearly healed.

*2. Ruptured popliteal artery; amputation of leg; recovery.*—E. F.—, male, *et.* 40, labourer. Shortly before admission patient, who was working on a railway line, was knocked into a sitting position by an engine, which pinned him to the end of a siding by both legs. Both knees became swollen very rapidly, and patient was brought to hospital, when both knee-joints were found to be distended with fluid; there was no external wound, and no evidence of fracture. Both legs were painful, and 2 days after admission a large bleb formed at back of left knee, and subsequently broke. The skin over left ankle showed discoloration, and there was some loss of sensation over the front of this joint. During the next few days evident signs of progressive gangrene of foot and leg were observed. No pulsation could be felt in tibial arteries. At the end of a week the left leg was greatly swollen, the knee-joint was still distended with fluid, and numerous bullæ were present all over the leg. Dorsum of left foot was quite anæsthetic, and on right side leg was also swollen and the tibial pulsation felt with difficulty. Amputation of the left leg was decided upon, and carried out on 9th day, through the lower third of thigh. A long anterior and short posterior flap was cut. The popliteal artery was found to be completely ruptured just above the origin of the tibial arteries. Considerable extravasation of blood had taken place; the artery contained recent clot. The vein contained fluid blood, but was compressed by extravasation. The knee-joint contained no fluid, and there was no evidence of injury to the bones. Patient stood the operation well, but some gangrene of the anterior flap occurred, and an extension was applied to prevent adhesion of the scar to the end of femur. The right leg remained swollen, and some discoloration of skin was present over right heel. Tibial pulsation was lost, but capillary circulation beneath toe-nails could be observed. There was some loss of sensation on dorsum of foot. The stump of left leg healed fairly rapidly, and the right leg was treated by daily massage. This caused rapid improvement, and patient was discharged on crutches at the end of 9 weeks. Cultures were taken from the fluid of bullæ on left leg, but both aerobic and anaerobic tubes showed no growth. Films from the fluid showed no phagocytes and no micro-organisms.

*Fractures.*—*Shaft of femur, simple.*—Males 28; females 9. Comminuted 8; greenstick 1; subtrochanteric 5; supracondylar 3; re-fracture while in hospital 1; also fracture of external tuberosity of tibia 1; traumatic synovitis of knee of opposite leg 1; tuberculous knee 1; tuberculous hip 1; tabs 1; fractured base 1. Transferred to Medical Ward for splenic anæmia 1.

*Treatment.*—Plaster-of-Paris splint 21; extension and massage without splints 7; Hodgen's splint 8; MacIntyre 2; double inclined plane 1; Dessault's splint 1; Hessing's splint 1; Bryant's extension 2.

*Shortening noted on discharge.*—Nil 3;  $\frac{1}{4}$  inch 6;  $\frac{1}{2}$  inch 8;  $\frac{3}{4}$  inch 5; 1 inch 4;  $1\frac{1}{4}$  inches 1;  $1\frac{1}{2}$  inches 1; 2 inches 1; not stated 18.

*Compound comminuted fracture of femoral shaft.*—Males 2. Scalp wound and fracture of ilium 1.

*Treatment.*—Wired 1; aseptic cleansing and suture 2; Hodgen's splint 1; plaster splint 1.

*Separation of lower femoral epiphysis.*—Female 1. Backward displacement.

*Treatment.*—Reduction by open operation. One inch shortening, good union.

*Fracture of femoral neck.*—Males 5; females 6. Intra-capsular 4; at base of neck 7; impacted intra-capsular 1; impacted at base of neck 3; comminuted 1.

*Treatment.*—Unimpacted 2. Liston's splint 2; sand-bags and massage 3; extension and massage 3; leather splint 2; plaster splint 1.

*Fracture of patella.*—Males 24; females 13. Refracture 1; comminuted 3; T-shaped 1; bilateral 1; ununited fracture of opposite patella 1.

*Treatment.*—Wired 23 (both patellæ in 1 case). Suture of patella with silk 1. Plaster or leather splints in remainder.

*Fracture of tibia and fibula, simple.*—Males 43; females 16. Spiral 1; supra-malleolar 5; through malleoli 4; double fracture 1; comminution 2.

*Treatment.*—Wired 1. Plaster splint, or Neville's or Cline's splint followed by plaster 58.

*Fracture of tibia and fibula, compound.*—Males 6; females 1. Comminution of fibula 1.

*Treatment.*—Cleansing of wounds, and plaster or Neville's splint 6; dressings and Neville's splint followed by plaster 1.

*Fracture of tibia and fibula, compound comminuted.*—Males 4; females 2.

*Treatment.*—Cleansing of wound and splinting 4; subsequent amputation of leg 1; amputation through femoral condyles 1; amputation through lower third of thigh 1.

*Fracture of tibia, simple.*—Males 13; females 6. Also fracture of humerus, radius, ulna, and ribs 1. Inoperable carcinoma of breast 1; tabs 1 (fracture ununited on discharge).

*Treatment.*—Plaster-of-Paris, or MacIntyre or Neville splints, 5 in all leather splint 1.

*Fracture of tibia, comminuted.*—Male 1.

*Treatment.*—Neville and plaster splint.

*Fracture of tibia, compound.*—Males 2.

*Treatment.*—Cleansing of wounds, Neville and plaster splints 2.

*Fracture of fibula, simple.*—Males 6; females 2.

*Treatment.*—Cline's splint 1; plaster of Paris in rest.

*Fracture of fibula, comminuted.*—Male 1.

*Treatment.*—Plaster-of-Paris splint.



*Fracture of fibula, compound comminuted.*—Male 1.

*Treatment.*—Cleansing of wound, Neville's splint, massage.

*Pott's fracture.*—Males 18; females 9. Compound 2.

*Treatment.*—Cleansing of wound, Neville's splint 1; scraping and Neville's splint 1; plaster-of-Paris, Cline's, or Neville's splint in the remainder.

*Fracture of astragalus.*—Male 1. Neck of bone.

*Treatment.*—Plaster-of-Paris splint.

*Fracture of os calcis.*—Males 3. All bilateral and comminuted.

*Treatment.*—Plaster-of-Paris splints in all.

*Fracture of metatarsals and phalanges.*—Male 1.

*Treatment.*—Rest.

*Dislocations.*—*Hip.*—Male 1; female 1. Dorsal 1; pubic 1; also fracture of opposite femoral shaft.

*Treatment.*—Reduction and plaster-of-Paris splint 1; reduction 8; rest 1.

*Subastragaloid.*—Male 1. Backwards and inwards.

*Treatment.*—Reduction and plaster splint.

*Tarso-metatarsal.*—Males 2. Metatarsus displaced outwards in both; fracture of base of second metatarsal 1.

*Treatment.*—Reduction and plaster splint 1; attempted reduction under anæsthetic 1.

*Ununited fracture.*—Males 9; Female 1. Readmission 1. Radius and ulna 1; olecranon 1; femoral shaft 1; femoral neck 1; tibia and fibula 4; tibia 1; fibula 1.

*Treatment.*—Wired 3; screwed 2; bone-grafting from iliac crest 1; boot and irons 1; osteotomy and massage 1; leather splint 1; dressings 1.

SPECIAL TABLE I.—*Statement*

Initials.	Occupation.	Age.	Sex.	Side.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval since primary radical cure.
W. W.	Smith's mate	24	M.	R.	Reducible inguinal	1897. Kocher with catgut and kangaroo tendon; 1897. Re-suture of canal	Per primam	3 months 7 years
T. B. G.	Paper-seller's assistant.	22	M.	R. and L.	"	At St. Bartholomew's Hospital, Rochester	L. per primam; R. suppuration	3 years
L. S.	Gas-stoker	28	M.	R.	"	Bassini at London Hospital	Per primam	4 years
F. H.	School	13	M.	L.	"	Bassini with silk	"	3 years
W. G.	Labourer	40	M.	R.	Irreducible inguinal	At Champion Hill Infirmary	"	11 weeks
W. C.	Bill-poster	38	M.	R.	"	Suture of external oblique with silk	"	2 years
G. J. H.	Machine minder	36	M.	R.	Reducible inguinal	Foster with silk	"	9 months
H. M.	Soldier, R.H.A.	26	M.	R.	"	At Woolwich Hospital	"	1 year
S. K.	Chairmaker	21	M.	L.	"	At London Hospital	Suppuration	7 years

*of Recurrent Hernia.*

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia.	Course of healing.	Remarks.
Reducible inguinal, R	6 months	Foster with strong catgut	Per primam	No sac was found at second operation in 1897, and no sac present on occasion of last hernia. Patient wore truss after first operation and also after the second, but not with regularity.
Reducible inguinal	R. 2½ years; L. 3 months	R. Bloodgood with salmon gut; L. Foster with salmon gut and silk	R. Per primam; L. Suppuration 3 weeks after operation	Wore truss for 6 months after primary operation; in hospital then for 8 weeks. Re-admitted twice after operation for recurrent hernia with stitch sinus on left side. Provided with double truss.
"	3 months	Bloodgood with catgut	Hæmatoma; no suppuration	Bronchitic subject. Previous operation for recurrent inguinal hernia on left side in St. Thomas's Hospital, January, 1904. No recurrence.
"	4 weeks	Bassini with silk	Per primam	Recurrence at upper part of canal; omentum in sac.
Irreducible inguinal	10 weeks	Foster with McEwen's catgut	Suppuration on 5th day	Nature of first operation uncertain.
Reducible inguinal	4 months	Truss	—	Admitted in 1903 with irreducible hernia, which was reduced under anæsthetic and a few days later radical cure was performed. Sac contained small intestine and appendix, the latter being removed.
"	6 weeks	Bassini with silk	Per primam	Serous fluid in sac.
"	5 weeks	Foster-Wallace with silk	"	Primary hernia followed kick from horse. Recurrence soon after fall when riding.
"	5 years	Foster with catgut	"	No sign of previous suturing of external ring; possibly original operation was for varicocele.

SPECIAL TABLE I—

Initials.	Occupation.	Age.	Sex.	Side.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval since primary radical cure.
J.R.D.	Labourer	30	M.	R.	Reducible inguinal	Foster with catgut (van Hoven's)	Per primam	8 months
R.A.G.	Md.	23	F.	L.	Reducible femoral	Battle with silk	„	2 years
E. C.	Md.	58	F.	R.	Strangulated femoral	Poupart's ligament to pectineus with silk	„	22 months
E. J.	Md.	37	F.	—	Reducible ventral, median	Suture of abdominal wall with continuous catgut and salmon gut	„	5 years
S. R.	Charwoman	55	F.	—	Irreducible umbilical, strangulated (1903)	1901. Suture of abdominal wall; 1903. Herniotomy and re-suture	„	4 years 18 months

*continued.*

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia.	Course of healing.	Remarks.
<b>Reducible inguinal</b>	2 months	Foster with silkworm gut	Per primam	At original operation radical cure of left-sided hernia was also performed by Bassini's method with catgut; no sac was found on either side. This left wound suppurated but no recurrence was observed. Definite sac found at second operation just above the original scar.
<b>Reducible femoral</b>	A few days	Battle with silk	"	Admitted for appendicitis, 3 attacks; appendix removed; recurrence of hernia noticed while in hospital. Small sac with no contents.
<b>Strangulated femoral</b>	28 hours	Roux	"	Original hernia present for 3 years; sac contained small gut and omentum, replaced. Present sac contained strangulated appendix and portion of cæcum, which reduced easily on opening sac; abdomen was then opened by displacement of rectus and congested appendix removed while portion of cæcal wall was invaginated.
<b>Median ventral, reducible</b>	3 months	Goßpel without incision of sac	Suppuration on 8th day	Original celiotomy for removal of broad ligament cyst. Belt worn continuously after first radical cure. Hernial protrusion in 2 places with sound scar between. Vomiting occurred during operation for first radical cure, and it was then thought that the continuous catgut suture used might have given way. Present operation performed by placing plate in muscular plane without anchorage to rectus sheath.
<b>Irreducible ventral, median</b>	3 months, painful	Rest in bed; abdominal belt	—	Occasional vomiting; bowels regular. Portion of sac contents reducible. Bronchitic subject.

SPECIAL TABLE I.

Initials.	Occupation.	Age.	Sex.	Side.	Nature of primary hernia.	Method of radical cure of primary hernia.	Course of healing of primary hernia.	Interval sin primary radical cure
E. M. W.	Dressmaker	49	F.	—	Ventral	Suture of abdominal wall at Guy's Hospital	Per primam	3 years
E. S.	W.	76	F.	—	Umbilical	Suture of abdominal on two occasions at St. Bartholomew's Hospital 11 and 12 years ago respectively	„	12 years
S. A.	Md.	48	F.	—	Irreducible umbilical	Suture of abdominal with salmon gut.	„	5 years

*ntinued.*

Nature of recurrent hernia.	Duration of recurrent hernia.	Method of radical cure of recurrent hernia	Course of healing.	Remarks.
<b>Strangulated ventral hernia</b>	2 years; strangulated 3 days	Suture of abdominal wall with catgut; transverse scar, with drainage	Superficial supuration	Original coeliotomy for removal of fibroids 12 years ago; hernial protusion observed 7 years later. At last operation the sac contained small bowel, which was returned to abdomen.
<b>Strangulated with obstruction by adhesions in sac</b>	About 10 years; strangulated 12 hours	Transverse suture of abdominal wall with strong salmon gut	Per primam	Patient had always worn a belt. Sac bilocular. Dense adhesions between small bowel and abdominal wall just outside neck of sac only partially freed; recent adhesions between coils of gut in sac freed completely. Discharged on 19th day.
<b>Strangulated umbilical</b>	12 months; strangulated 2 days	Vertical suture of abdominal wall with salmon gut, with drainage	—	Resection of 5 inches of gangrenous small bowel with lateral anastomosis. Death 5 days after operation from peritonitis. Bowel wall unsound at site of closed ends; faecal extravasation; anastomosis sound.

SPECIAL TABLE II.—*Erysipelas*

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
1	M.	16	Ankylosis of knee	Edward	4 days	—	February
2	F.	42	Prepatellar bursitis, acute	Anne	3 days	Incision of bursa	January
3	F.	26	Facial erysipelas	—	—	Abrasion on nose	April
4	M.	39	Nephralgia	Edward	54 days	Exploratory nephrotomy urinary fistula	October
5	M.	57	Hemiplegia	Arthur	21 days	—	February
6	M.	4	Chronic mastoid	Seymour	76 days	Sequestrotomy after complete mastoid operation	November
7	M.	11	„	Albert	33 days	Mastoid grafting	January
8	F.	46	Carcinoma of breast	Alexandra	20 days	Amputation of breast	February
9	M.	42	Cellulitis of neck and face	William	8 days	Incision of cellulitis	September
10	F.	6	Acute mastoid	Seymour	3 days	Antrotomy	„
11	M.	49	Cystitis, with suprapubic fistula	Leopold	27 days	?	August
12	F.	1½	Imperforate anus colostomy opening	Seymour	6 days	?	„



arising in Hospital).

Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Face	—	8 days	C.	Previous attack of facial erysipelas 2 years before. Present attack severe; treated with anti-streptococcus (erysipelas) serum. Improvement rapid after injection of serum on 5th and 6th days. Abscess developed at site of inoculation, yielding pure culture of <i>Staphylococcus aureus</i> .
Around wound	2 days	10 days	C.	Other cases of erysipelas in ward.
Nose and face	1 day	7 days, with severe recurrence lasting 9 days	C.	Anti-streptococcus (erysipelas) serum; very little effect on rash or temperature. Patient was a nurse in diphtheria ward at time of attack.
Around wound	50 days after operation	6 days	C.	Mild attack. Wound suppurated.
Nose and face	—	6 days	C.	Previous attack before admission to Medical ward, which had no other cases of erysipelas.
Around wound	25 days	6 days	C.	—
„	18 days	6 days	C.	—
„	10 days	13 days	D.	Severe suppuration of wound, and beneath it an empyema with no direct communication between wound and pleural cavity. For abstract see "Carcinoma of Breast."
Face, around wound	6 days	8 days	C.	Severe attack. Anti-streptococcus (erysipelas) serum on 7th day produced rapid fall in temperature, with only one slight rise 48 hours afterwards.
Around wound	2 days	6 days	C.	—
Around	—	7 days	C.	—
fistula and later on face	—	7 days	C.	—
Around colostomy wound	—	7 days	C.	—

SPECIAL TABLE II.—

No.	Sex.	Age.	Disease for which admitted.	Ward in which it arose.	Duration in hospital before attack.	Probable cause of attack.	Month.
13	F.	1 $\frac{2}{13}$	Burn of trunk and arm	Seymour	25 days	?	March
14	F.	30	Sarcoma of glands of neck	Beatrice	36 days	Excision of glands	February
15	F.	49	Myxo-lipoma of leg	„	23 days	Excision	„
16	F.	1	Acute epiphysitis of femur	Anne	20 days	Incision and drainage	„
17	F.	27	Erysipelas	„	—	Conjunctivitis	January
18	M.	18	Appendicitis, with general peritonitis	Clayton	58 days	Re-suture of abdominal wall	June
19	M.	19	Suppurating inguinal glands	William	18 days	Incision and drainage	March
20	F.	29	Burns of shoulders, arm, and face	Alexandra	12 days	—	December
21	F.	58	Carcinoma of rectum	Beatrice	15 days	Colostomy	April
22	F.	41	„	Anne	83 days	Trans-sacral excision	November
23	M.	46	Endothelioma of eyelid	Edward	12 days	Excision of eyeball and ulcer	February
24	F.	28	Melanotic sarcoma of mons veneris	Elizabeth	30 days	Excision with inguinal glands	May
25	F.	60	Melanotic sarcoma of groin	Beatrice	20 days	Excision	June

*continued.*

Part where eruption appeared.	Interval between action of probable cause and appearance of eruption.	Duration of attack.	Result.	Remarks.
Around burn	—	12 days	C.	Burn was scrubbed under chloroform on day of admission. Subsequent treatment with Bardella.
Around wound	12 days	6 days	C.	—
"	18 days	7 days	C.	Wound suppurated before eruption appeared, followed by suppurative thrombosis of internal saphenous vein.
"	"	11 days	C.	Severe attack.
Face	?	14 days	C.	Nurse; not attending erysipelas cases; very severe attack. Anti-streptococcus (erysipelas) serum on 7th and 8th days; good effect.
Around wound	1 day	10 days	C.	Abdominal wall resutured twice, re-drainage of abdomen shortly before eruption of erysipelas.
"	15 days	10 days	C.	Anti-streptococcus serum on 6th day; rapid improvement.
Around burn	—	9 days	C.	—
Around wound	13 days	5 days	D.	For abstract see "Carcinoma of Rectum."
"	75 days	12 days	C.	The eruption appeared round posterior wound, which was discharging freely 9 days after left inguinal colostomy had been performed.
"	3 days	6 days	C.	Two previous attacks of erysipelas around ulcer, 1 year and 7 weeks respectively, before present admission. See special abstract under "Endothelioma."
"	24 days	18 days	D.	Concurrent melanosis of skin and erysipelas. For abstract see "Sarcoma."
"	10 days	13 days	D.	Wound suppurated before eruption appeared.

**SPECIAL TABLE III.**  
**PYÆMIA ARISING IN HOSPITAL.**

---

**Male 1, died. Case of parenchymatous goitre; for abstract see Case 3,  
"Parenchymatous Goitre, Fatal Cases."**

**R E P O R T**  
**OF THE**  
**IN-PATIENT DEPARTMENT FOR DISEASES**  
**OF WOMEN**  
**FOR THE YEAR 1905.**

---

**By R. H. BELL, M.A., M.B., B.C.(CANTAB.), M.R.C.P., F.R.C.S.,**  
**OBSTETRIC REGISTRAR.**

---

**THE Report consists of—**

**I. Four tables giving—**

(1) The number of patients admitted during the year, with the results of treatment.

(2) A general classification of the diseases for which patients were admitted.

(3) The number of operations during the year and the results obtained.

(4) The causes of death in the cases ending fatally.

**VOL. XXXIV.**

**26**

II. A special table giving a brief account of abdominal sections for cases of tubal gestation.

III. Special analyses and abstracts.

The special table of vaginal hysterectomies has been discontinued.

TABLE I.

*General Statement of Patients in Adelaide Ward.*

Number of Beds in Ward (including small Ward)	...	...	...	29
Number of Patients discharged or who died in 1905 :	Rate per cent.			
Discharged	...	...	...	415
Died	...	...	...	18
Total	...	...	433	...
Average number of days of each patient's stay in hospital	...	28·73		
Average daily number of patients in ward	..	...	27·83	

TABLE II.—General

Disease.	Number of cases.	Age.												Re- sult.	
		10-20.		30.		40.		50.		60.		Above 60.			
		Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.				
		Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.				
I. DISEASES OF OVARY.															
A. Malignant disease . . . . .	5	...	...	...	...	...	...	3	...	...	...	1	1	1	4
B. Cysts :															
a. Simple and multiple . . . . .	24	1	...	1	1	1	...	5	...	3	...	2	...	23	1
b. Dermoid . . . . .	6	...	...	1	...	3	2	...	...	...	...	...	...	4	1
II. DISEASES OF FALLOPIAN TUBE.															
A. Salpingitis . . . . .	29	1	...	14	...	12	...	2	...	...	...	...	...	29	...
B. Pyosalpinx . . . . .	4	...	...	1	...	3	...	...	...	...	...	...	...	4	...
C. Hydrosalpinx and Tubo-ovarian cyst .	2	...	...	...	...	2	...	...	...	...	...	...	...	2	...
D. Tubal gestation . . . . .	14	...	...	8	...	3	1	2	...	...	...	...	...	13	1
III. DISEASES OF THE PELVIC PERITONEUM, CELLULAR TISSUE, ETC.															
A. Pelvic peritonitis . . . . .	11	...	...	4	...	6	...	1	...	...	...	...	...	11	...
B. Pelvic cellulitis . . . . .	3	...	...	1	...	1	...	...	...	1	...	...	...	3	...



## Table of Diseases.

## Remarks.

carcinoma in 3 cases, sarcoma (round-celled) in 2. The only case which survived was a columnar-celled carcinoma of the right ovary, associated with carcinoma of the body of the uterus. The report upon the latter from the Clin. Lab. was "carcinoma, probably squamous-celled." The uterus and right ovary were removed by abdominal section. For the 4 fatal cases see Table IV.

ovarian adenoma in 10 cases, inflamed in 2; unilocular cyst in 4 cases, with torsion of the pedicle in 1, hydrosalpinx in 1, and broad ligament cyst in 1; papilliferous cysts in 3 cases; multilocular cystic tumour (intra-ligamentous), with solid fibro-myomatous portion, 1 case; blood cysts, associated with pelvic peritonitis, in 4 cases; suppurating cysts in 2 cases, one of which had ruptured before admission. This was the fatal case (see Table IV).

removal of the pedicle in 2 cases. Ovariectomy in all save one, where there was suppuration and peritonitis, and the only treatment possible was incision and drainage. For details of this and the other fatal case see Table IV.

associated with inflamed cyst of the ovary 3 cases; suppurating cyst of the ovary 4 cases; abscess in the ovary 3 cases; intra-peritoneal abscess 4 cases; and appendicitis 1 case. Abdominal section with removal of diseased structures in 19 cases; drainage of abscess only in 2 cases, in 1 *per abdomen*, and in the other *per vaginam*; rest in 8 cases. Of the 19 cases in which the diseased structures were removed by abdominal section drainage was employed in 2 only, in both of which there was an intra-peritoneal abscess complicating the salpingitis.

double pyosalpinx in 3 cases, with abscesses in both ovaries in 1, abscess in right ovary in 1, and suppurating cyst of left ovary in 1. Abdominal section, with removal of diseased structures, in all.

double hydrosalpinx in 1, with small cyst of right ovary, and cirrhotic left ovary. Treated by removal of both uterine appendages. The other was a case of tubo-ovarian cyst of the right side, associated with congenital elongation of the cervix. Treated by removal of the right uterine appendages and amputation of the cervix.

The fatal case was one of full-term extra-uterine gestation; for details see Table IV. Of the other 13 cases 12 were treated by abdominal section (see Special Table), and one by rest.

chronic perimetritis in 2 cases, treated by incision and drainage. In one case, with retroverted fixed uterus, ventrifixation was performed; in another the right uterine appendages and the appendix vermiformis were removed; and in another the uterus and left uterine appendages were removed *per vaginam*. The remaining 6 cases were treated by rest.

abscess formation in 2, treatment by incision.

TABLE II—

Disease.	Number of cases.	Age.											
		10-20.		20-30.		30-40.		40-50.		50-60.		Above 60.	
		Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.
III. DISEASES OF THE PELVIC PERITONEUM, CELLULAR TISSUE, ETC—continued.													
C. Pelvic abscess . . . . .	9	...	...	1	...	5	1	2	...	...	...	...	8
D. Broad-ligament cyst . . . . .	2	...	...	...	...	1	...	1	...	...	...	...	2
IV. DISEASES OF UTERUS AND CERVIX.													
A. Endometritis . . . . .	28	...	...	10	...	7	...	3	...	1	...	2	22
B. Adenomata of endometrium . . . . .	16	...	...	1	...	6	...	6	...	3	...	...	16
C. Fibro-myoma . . . . .	42	...	...	...	...	14	...	22	1	4	...	1	41
D. Fibrosis and subinvolution . . . . .	5	...	...	...	...	1	...	2	1	1	...	...	4
E. Polypi, fibroid and mucous . . . . .	14	...	...	...	...	6	...	8	...	...	...	...	14
F. Malignant disease of cervix . . . . .	14	...	...	...	...	4	...	6	...	1	...	2	11
G. Malignant disease of the body of the uterus . . . . .	6	...	...	...	...	...	...	...	...	3	1	2	5
H. Prolapse . . . . .	16	...	...	3	...	5	...	3	...	3	...	2	16

continued.

## Remarks.

Abdominal exploration and drainage in 2 cases, including the fatal case (see Table IV). Vaginal incision and drainage in 4 cases. In 1 case the abscess, which was tuberculous in origin, discharged *per vaginam*. This patient was re-admitted later, but nothing further was done. In another case the pus was discharged *per rectum*. Removal in one case *per abdomen* and in the other *per vaginam*.

Curetting in all save 1, which was a case of gonorrhoeal endometritis in a young woman at 20, complicated by salpingitis. In this case the uterus and appendages of both sides were removed *per vaginam*.

Vaginal hysterectomy in 1 case; curetting in all the others.

Cervical fibroid in 1 case; tumours growing from both body and cervix in 2 cases. (Edematous degeneration of varying degrees in 9 cases; necrotic degeneration in 3 cases; cystic degeneration in 1 case; necrobiotic (raw meat) degeneration in 1 case; necrotic, calcareous, and sarcomatous degeneration in 1 case. Complications: dermoid cyst of left ovary; papillomatous cyst of left ovary; bilateral tubo-ovarian cysts; salpingo-oophoritis in 2 cases; pelvic peritonitis; secondary carcinomatous growth in abdomen, following operation for scirrhus of breast; retention of urine; ruptured perineum. Pan-hysterectomy in 30 cases; the retro-peritoneal flap operation in 2 cases; vaginal hysterectomy in 4 cases; enucleation of sub-mucous fibroid in 3 cases; exploratory laparotomy in 1 case; no operation in 2 cases. For details of fatal case see Table IV.

In 1 case the fibrotic uterus showed marked calcification of the blood-vessels. Small fibro-miomata were present. The uterus was removed by the abdominal route; see "Special Abstracts." In the other four cases vaginal hysterectomy was performed. The fatal result was due to hæmorrhage. See Table IV.

Fibroid polyp in 12 cases, sloughing in 3. In 1 of these there was partial inversion of the uterus, which was removed with the tumour. Mucous polyp in 2 cases. Removal in all, curetting also in 2.

Mucous-celled carcinoma in all cases submitted to microscopical examination, *i.e.* in cases treated radically. Complications: pelvic peritonitis, with sero-purulent exudation; small fibro-miomata and a patch of adeno-myoma in the body of the uterus. Vaginal hysterectomy in 5 cases; combined vagino-abdominal hysterectomy in 1 case; incision and drainage *per vaginam*, followed by amputation of the cervix, in 1 case; inoperable in 7 cases. For fatal case see Table IV, and for case complicated by small fibro-miomata and adeno-myoma see "Special Abstracts."

Carcinoma in 4 cases proved microscopically, probable in all. Vaginal hysterectomy in 2 cases; vagino-abdominal hysterectomy in 2 cases; exploratory operation in 1, which proved inoperable; inoperable in 1. For fatal case see Table IV.

Amputation of cervix and posterior colpo-perineorrhaphy in 7 cases; amputation of cervix, anterior colpo-perineorrhaphy, and posterior colpo-perineorrhaphy in 3 cases; anterior colpo-perineorrhaphy and posterior colpo-perineorrhaphy in 1 case; posterior colpo-perineorrhaphy in 1 case; ventrifixation and posterior colpo-perineorrhaphy in 2 cases, with in 1 enucleation of a mesenteric cyst; le Fort's operation in 1 case; ring pessary in 1 case.

TABLE II—

Disease.	Number of cases.	Age.												Re- sult.
		10-20.		30.		40.		50.		60.		Above 60.		
		Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	
IV. DISEASES OF UTERUS AND CERVIX— continued.														
I. Retroversion . . . . .	8	...	...	2	...	4	...	2	...	...	...	...	...	8
K. Laceration of cervix . . . . .	7	...	...	...	...	6	...	1	...	...	...	...	...	7
L. Ulceration of cervix . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	1
M. Congenital elongation of cervix . . . . .	3	1	...	1	...	1	...	...	...	...	...	...	...	3
V. DISEASES OF THE VAGINA, VULVA, ETC.														
A. Prolapse of vaginal walls . . . . .	7	...	...	2	...	5	...	...	...	...	...	...	...	7
B. Ruptured perineum . . . . .	13	...	...	5	...	5	...	1	...	1	...	1	...	13
C. Urethral caruncle . . . . .	2	...	...	...	...	...	...	...	...	2	...	...	...	2
D. Prolapse of urethral mucous membrane . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	1
E. Recto-vaginal fistula . . . . .	4	...	...	2	...	2	...	...	...	...	...	...	...	4
F. Traumatic ulceration of vagina . . . . .	1	...	...	...	...	...	...	...	...	1	...	...	...	1
G. Granuloma of vaginal scar . . . . .	1	...	...	...	...	...	...	1	...	...	...	...	...	1
H. Oedematous fibro-myoma of vagina . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1
I. Carcinoma of vulva . . . . .	1	...	...	...	...	...	...	...	...	...	...	1	...	1
K. Suppurating cyst of Bartholin's gland . . . . .	2	1	...	1	...	...	...	...	...	...	...	...	...	2
L. Atresia vaginæ . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1
M. Hæmatocolpos . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	1
VI. PREGNANCY AND ITS ACCIDENTS.														
A. Pregnancy . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1
B. Admitted in labour . . . . .	1	...	...	...	...	1	...	...	...	...	...	...	...	1
C. Pregnancy, with contracted pelvis . . . . .	2	...	...	1	...	1	...	...	...	...	...	...	...	2
D. Hydatidiform mole . . . . .	2	...	...	...	...	2	...	...	...	2	...	...	...	2
E. Hæmorrhage during pregnancy . . . . .	6	...	...	3	...	3	...	...	...	...	...	...	...	6
F. Nephritis during pregnancy . . . . .	4	...	...	1	1	...	1	1	...	...	...	...	...	2 1
G. Vomiting of pregnancy . . . . .	1	...	...	1	...	...	...	...	...	...	...	...	...	1
H. Chorea of pregnancy . . . . .	1	1	...	...	...	...	...	...	...	...	...	...	...	1
I. Abdominal pain in pregnancy . . . . .	2	...	...	1	...	...	...	1	...	...	...	...	...	2
K. Retroverted gravid uterus . . . . .	3	...	...	2	...	1	...	...	...	...	...	...	...	3

*continued.*

## Remarks.

Ventrifixation in 2 cases, with removal of small cystic ovary in 1; Hodge pessary in 3 cases; *nil* in 3.

Emmet's operation in 6 cases, with curetting in 2, and posterior colpo-perineorrhaphy in 1; amputation of cervix in 1 case.

The whole of the inner aspect of the cervical canal was filled with hard ulcerating growth, which to the naked eye appeared undoubtedly malignant. The report however from the Clinical Laboratory was as follows: "Three portions of uterus examined but no evidence of new growth found. Chronic inflammatory."

Amputation of cervix in all cases.

Posterior colpo-perineorrhaphy in all cases; combined with anterior colporrhaphy in 1.

Perineorrhaphy in all cases save 1, when the operation was postponed on account of pregnancy; amputation of cervix also in 1; removal of portions of cervical lips in 1; and removal of cyst of Bartholin's gland in 1.

Excision and cautery.

Excision and cautery.

Perineorrhaphy in all cases. In 1 case the operation was not successful. The patient was readmitted two months later, and the second operation was successful.

Due to pessary.

Following vaginal hysterectomy for carcinoma of cervix. Report from Clin. Lab.: "Granuloma."

Removal.

Excision.

Excision in 1; incision in 1.

Associated with imperfect development of the uterus and absence of the right uterine appendages; also periodic pain in region of the left ovary; treated by removal of the left uterine appendages.

Incision and drainage.

Sent in with a history pointing to pelvic inflammation complicating pregnancy. No signs of anything beyond a normal gestation at the fourth month.

Cæsarian section in both cases. Both children living.

Uterus emptied in both cases.

The uterus was emptied in 5 cases; in the other the hæmorrhage ceased with rest.

Abortion occurred spontaneously in one case, premature labour in another. Both patients recovered. For the fatal cases, both of which were of great interest, see Table IV and "Special Abstracts."

The vomiting ceased with rest.

Improvement with rest, bromide and chloral, and arsenic.

Spontaneous reposition in 1; in the others the uterus was replaced and a Hodge pessary inserted.

TABLE II—

Disease.	Number of cases.	Age.										Re- sult.
		10-20.		30.		40.		50.		60.		
		Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	Discharged.	Died.	
VI. PREGNANCY AND ITS ACCIDENTS— continued.												
L. Pyrexia following confinement . . . . .	1	...	...	1	...	...	...	...	...	...	...	1
M. Pelvic suppuration following confinement.	1	...	...	...	...	1	...	...	...	...	...	1
N. Retained products of conception . . . . .	17	...	...	9	...	7	...	1	...	...	...	17
O. Incomplete abortion . . . . .	16	...	...	3	...	8	...	5	...	...	...	16
P. Hæmorrhage following miscarriage . . . . .	5	...	...	2	...	2	...	1	...	...	...	5
VII. DISORDERS OF MENSTRUATION.												
A. Dysmenorrhœa . . . . .	16	1	...	13	...	2	...	...	...	...	...	16
B. Menorrhagia . . . . .	8	3	...	4	...	1	...	...	...	...	...	8
C. Metrorrhagia . . . . .	10	1	...	2	...	2	...	5	...	...	...	10
VIII. VARIOUS.												
A. Pelvic neuralgia . . . . .	3	...	...	1	...	...	...	1	...	1	...	3
B. Dyspareunia . . . . .	1	...	...	1	...	...	...	...	...	...	...	1
C. Ventral hernia . . . . .	3	...	...	1	...	2	...	...	...	...	...	3
D. Obesity . . . . .	1	...	...	...	...	...	...	...	1	...	...	1
E. Pseudo-cyesis . . . . .	1	...	...	...	...	1	...	...	...	...	...	1
F. Hermaphroditism . . . . .	1	1	...	...	...	...	...	...	...	...	...	1
G. Malignant disease in pelvis . . . . .	3	...	...	...	...	...	...	2	...	...	1	3
H. Malignant disease of bowel . . . . .	4	...	...	...	...	1	...	1	...	1	1	3
I. Malignant disease of peritoneum . . . . .	1	...	...	...	...	...	...	1	...	...	...	1
K. Tuberculous peritonitis . . . . .	1	...	...	...	...	...	...	1	...	...	...	1
L. Sarcomatous cyst . . . . .	1	...	...	...	...	...	...	...	...	...	1	1
M. Retro-peritoneal cyst . . . . .	1	...	...	...	...	1	...	...	...	...	...	1
N. Stitch sinus . . . . .	1	...	...	...	...	...	...	1	...	...	...	1
O. Abdominal sinus . . . . .	2	...	...	1	...	1	...	...	...	...	...	2
P. Abdominal pain . . . . .	1	...	...	...	...	1	...	...	...	...	...	1
Q. Inflammatory mass in abdomen . . . . .	1	...	...	...	...	1	...	...	...	...	...	1
R. Chronic obstruction . . . . .	1	...	...	...	...	...	...	...	...	1	...	1
S. Fissure in ano . . . . .	1	...	...	...	...	...	...	1	...	...	...	1
T. Caries of rib . . . . .	1	...	...	1	...	...	...	...	...	...	...	1
U. Inguinal hernia . . . . .	1	...	...	1	...	...	...	...	...	...	...	1
V. Sacro-iliac disease . . . . .	1	...	...	...	...	...	...	1	...	...	...	1
W. Difficulty with micturition . . . . .	4	...	...	2	...	1	...	1	...	...	...	4
X. Neurasthenia . . . . .	1	...	...	...	...	1	...	...	...	...	...	1
Y. Appendicitis . . . . .	1	...	...	...	...	1	...	...	...	...	...	1

*continued.*

## Remarks.

Subsided with rest.

See Table IV.

Curetting in all.

Uterus emptied in all, with perineorrhaphy in 1.

Curetting in 4; rest and ergot in 1.

Dilatation and curetting in all, with stem pessary in 12. In one case there was a small cyst of the left ovary, which was removed by a posterior colpotomy.

Curetting in all.

Curetting in 8; rest in 1; 1 case declined operation.

Dilatation of vagina and cervix.

Radical cure in 2 cases; one case transferred to Surgical side.

Exploratory operation in 1; 2 were clearly inoperable.

Exploratory operation in 3, one of which was fatal (see Table IV); another was subsequently transferred to Surgical side. In the remaining case there was an abscess associated with malignant disease, and the treatment consisted of incision.

Exploration and drainage. Subsequently readmitted and transferred to Surgical side.

Abdominal exploration and curetting for associated metrorrhagia.

Of uncertain origin. For further details see Table IV.

Probably arising in pancreas.

Stitch removed.

Resulting in both cases from operations performed elsewhere.

The pain followed a ventrifixation, and was associated with prolapse of the vaginal walls.

The treatment consisted of vaginal hysterectomy, anterior colporrhaphy, and posterior colpo-perineorrhaphy.

Connected with the stump of the right uterine appendages; operation elsewhere; treated by rest.

Also urethral caruncle. Transferred to Surgical side.

Transferred to Surgical side.

Transferred to Surgical side.

Hæmaturia in 1 case, cause undiscovered; frequency of micturition 1, painful micturition in 2 cases, with retention in 1.

Transferred to Surgical side.

TABLE III.—Operations.

Nature of operation.	Number of cases.	Discharged.	Died.
<i>Abdominal sections.</i> —Total number . . . . .	132	122	10
Cystic adenoma of ovary . . . . .	10	10	...
Unilocular cyst of ovary . . . . .	3	3	...
Blood cyst of ovary . . . . .	4	4	...
Suppurating cyst of ovary . . . . .	2	1	1
Papilliferous cyst of ovary . . . . .	3	3	...
Multilocular cystic tumour, with solid fibro-myomatous portion . . . . .	1	1	...
Carcinoma of ovary . . . . .	3	1	2
Sarcoma of ovary . . . . .	1	...	1
Dermoid cyst of ovary . . . . .	5	4	1
Broad-ligament cyst . . . . .	1	1	...
Salpingitis . . . . .	20	20	...
Pyosalpinx . . . . .	4	4	...
Hydrosalpinx . . . . .	1	1	...
Tubo-ovarian cyst . . . . .	1	1	...
Tubal gestation . . . . .	12	12	...
Extra-uterine gestation (full-term) . . . . .	1	...	1
Pelvic peritonitis . . . . .	3	3	...
Pelvic abscess . . . . .	3	1	2
Hysterectomy for fibro-myoma . . . . .	32	31	1
Hysterectomy for fibrotic uterus . . . . .	1	1	...
Vagino-abdominal hysterectomy . . . . .	3	3	...
Ventrifixation . . . . .	4	4	...
Cæsarian section . . . . .	2	2	...
Removal of left uterine appendages . . . . .	1	1	...
Ventral hernia . . . . .	2	2	...
Retro-peritoneal cyst . . . . .	1	1	...
Exploratory operations . . . . .	8	7	1
<i>Other operations.</i>			
Posterior colpotomy . . . . .	3	3	...
Drainage <i>per vaginam</i> of serous perimetritis . . . . .	2	2	...



*performed during the year.*

**Remarks.**

Three more than in 1904.

Inflammation of the cyst in 2 cases.

Torsion of the pedicle in 1 case. Associated with hydrosalpinx in 1, and broad ligament cyst in 1 case.

Associated with pelvic peritonitis.

For fatal case see Table IV.

Bilateral in 2 cases.

See Special Abstracts.

For fatal cases see Table IV.

See Table IV.

Torsion of the pedicle in 1 case. For fatal case see Table IV.

Removal of the diseased structure in 19 out of the 20 cases; drainage of abscess only in the remaining one. Drainage was employed twice only where the diseased structures were removed, and in both cases the salpingitis had led to the formation of intra-peritoneal abscesses.

Double in 3 cases. Removal of diseased structures in all.

Bilateral. Both uterine appendages removed.

See Special Table.

See Table IV.

Removal of right uterine appendages and appendix vermiformis in 1 (origin of pelvic inflammation doubtful); separation of adhesions and ventrifixation in 1; evacuation of serous fluid in 1 (serous perimetritis).

For fatal cases see Table IV.

The complete operation in 30 cases; the retro-peritoneal flap operation in 2 cases. For fatal case see Table IV.

The uterine showed marked calcification of the blood-vessels. Small fibro-myomata were present.

For malignant disease of the body in 2 cases; for carcinoma of the cervix, associated with fibro-myomata and a patch of adeno-myoma in the body of the uterus in 1 case.

With enucleation of a mesenteric cyst in 1 case, and removal of a small cystic ovary in another. In two cases the abdominal section was associated with plastic vaginal operations.

In case of atresia vaginae, see Table II.

Radical cure.

Probably arising in pancreas.

In one case the abdomen was opened to remove the uterus for fibro-myomata, and the operation abandoned on account of a secondary growth from a primary carcinoma of the breast; malignant disease of the body of the uterus 1 case; malignant disease in the pelvis 1 case; of the bowel 3 cases; of the peritoneum 1 case; tuberculous peritonitis 1 case. For fatal case see Table IV.

Removal of unilocular ovarian cyst, 1 case; removal of suppurating ovarian cyst 1 case; removal of broad ligament cyst, 1 case.

TABLE III—

Nature of operation.	Number of cases.	Discharged.	Died.
<i>Other operations—continued.</i>			
Drainage <i>per vaginam</i> of pelvic abscess . . . .	7	6	1
Incision of cellulitic abscess . . . . .	2	2	...
Vaginal hysterectomy . . . . .	21	18	3
Enucleation of submucous fibroid . . . . .	3	3	...
Removal of fibroid polyp . . . . .	11	11	...
Removal of mucous polyp . . . . .	2	2	...
Curetting . . . . .	78	78	...
Dilatation of uterine canal . . . . .	17	17	...
Evacuation of uterus . . . . .	22	22	...
Induction of premature labour . . . . .	2	...	2
Amputation of cervix . . . . .	15	15	...
Posterior colpo-perineorrhaphy . . . . .	21	21	...
Le Fort's operation . . . . .	1	1	...
Emmet's operation . . . . .	6	6	...
Perineorrhaphy . . . . .	17	17	...
Urethral caruncle . . . . .	2	2	...
Prolapse of urethral mucous membrane . . . . .	1	1	...
Fibro-myoma of vagina . . . . .	1	1	...
Carcinoma of vulva . . . . .	1	1	...
Suppurating cyst of Bartholin's gland . . . . .	2	2	...
Hæmatocolpos . . . . .	1	1	...
Exploration of bladder . . . . .	1	1	...

*continued.***Remarks.**

The fatal case, where the suppuration was associated with a dermoid cyst which had twisted its pedicle, see Table IV.

For malignant disease in 7 cases; for small fibromyomata and fibrosis in 8 cases; and for varied conditions for which see Table II in the remaining 6 cases. For fatal cases see Table IV.

Curetting also in 16; followed by stem pessary in 12.

See Table IV.

For carcinoma of cervix, 1 case; for prolapse, 10 cases, associated in all with plastic vaginal operations; for laceration of cervix, 1 case; for congenital elongation of cervix, 3 cases.

Associated with amputation of the cervix in 10 cases, and with anterior colporrhaphy in 5 cases.

Curetting also in 2; posterior colpo-perineorrhaphy in 1.

For ruptured perineum in 13 cases; recto-vaginal fistula in 4 cases. Combined with amputation of cervix in 1, removal of portions of cervical lips in 1, and removal of cyst of Bartholin's gland in 1.

Excision and cautery.

Excision and cautery.

Removal.

Excision.

Excision in 1; incision in 1.

Incision and drainage.

In case of hæmaturia; no cause discovered.

TABLE IV.—*Causes of*

No.	Name and date of admission.	Age.	Disease.	Operation.	Duration of residence.	Number of days after operation.
1	A. A., March 18	27	Suppurating cyst of left ovary (ruptured); general peritonitis	Removal of cyst, lavage and drainage	Days. 4	4
2	A. R., March 4	38	Dermoid cyst of right ovary, containing pus and gas	Removal of cyst, with the uterus; drainage <i>per abdomen</i> and <i>per vaginam</i>	5	—
3	A. H., Nov. 1	35	Ovarian tumour, partly dermoid, partly sarcoma; torsion of the pedicle; suppuration and spreading peritonitis	Incision and drainage <i>per vaginam</i>	1	1
4	A. S., Feb. 21	60	Sarcoma of ovary	—	4	—
5	S. C., July 3	45	Carcinoma of both ovaries; secondary growths in omentum, etc.	Removal of both ovaries and secondary growth in omentum	8	5
6	A. W., Aug. 26	43	Sarcoma of both ovaries; secondary growths in liver and retro-peritoneal glands	Abdominal exploration	11	6
7	M. E., Nov. 1	48	Carcinoma of both ovaries; secondary growths in peritoneum and liver	Abdominal exploration	6	4
8	P. H., Aug. 20	34	Full-term extra-uterine gestation; dead fœtus	Removal of fœtus; sac stitched to abdominal wall	12	7

## Death in Fatal Cases.

## Cause of death and Remarks.

The patient had been examined under anæsthesia the day before admission, and the rupture of the suppurating cyst was probably due to this examination. She was admitted in a very serious condition, with rigid abdomen, dry tongue, and pulse 144 per minute.

P.M.—General peritonitis.

For the first three days in hospital the temperature was normal, and the patient, though ill, did not appear to be in any immediate danger. On the evening of the fourth day she became suddenly faint. A rigor followed, and the temperature rose to 104° F. The cyst was adherent to the posterior wall of the uterus, which was in a sloughing condition. The patient only survived the operation two hours. P.M.—Death from shock. No trace of general peritonitis.

Admitted in a very serious condition; pulse 130, temperature 102°. A large pelvic abscess was opened and drained. Death occurred the next day. P.M.—The tumour was about 4 in. in diameter and was mainly composed of a dermoid cyst, but there was a smaller solid portion obviously malignant (*microscopical examination*—spindle-celled sarcoma). The abscess was the result of puriform ulceration of this growth. The anterior wall of the rectum had been invaded, and the abscess was in communication with the lumen of the bowel. There was a general plastic peritonitis.

P.M.—Moderate degree of ascites. Large malignant growth filling the pelvis and rising above the umbilicus. Several secondary nodules in mesentery and omentum. Report from Pathological Laboratory: "Sarcoma (large round-celled) of ovary and omentum."

The patient's general condition was good, but at the operation the growth was seen to be very extensive, and the omentum contained a secondary malignant cyst the size of a cricket-ball. This was removed, together with both ovaries, but several smaller secondary nodules were perforce left *in situ* owing to collapse. P.M.—Large number of soft semi-fluid masses of growth involving the mesentery, omentum, and parietal peritoneum. Pelvic peritonitis. On *microscopical examination* the growth proved to be columnar-celled carcinoma.

When the abdomen was opened the growth was seen to have invaded the right broad ligament and the condition of the patient was not such as to justify an extensive operation. No attempt therefore was made to remove the disease. P.M.—In addition to the primary growths in both ovaries, the retro-peritoneal glands were infiltrated and the liver studded with secondary nodules. Report from Pathological Laboratory: "Ovary, round-celled sarcoma; liver, sarcoma of alveolar type."

The secondary involvement of the peritoneum was apparent as soon as the abdomen was opened. There was considerable ascites. P.M.—Malignant disease of both ovaries, with very extensive disease of the peritoneum, parietal and visceral, and nodules both on the surface and in the substance of the liver. *Microscopical examination*.—Spheroidal-celled carcinoma.

Death of the fœtus had occurred rather more than four weeks before admission. After removal of the fœtus an attempt was made to separate the placenta, but the hæmorrhage being severe the attempt was abandoned, and the bleeding checked by painting the raw surface with adrenalin and plugging the sac. The plugs were frequently changed and the cavity washed out with peroxide of hydrogen, but it became very septic and offensive. On September 1st the sac was explored under chloroform and a portion of placenta easily separated and removed. Further manipulations were followed by considerable hæmorrhage, which was controlled by plugging, but the patient gradually sank and died the same evening. The fœtus was a female child, very well developed, and weighing 8 lb. 2 oz. It was unacrated, but cultures from the fluid contained in the gestation sac were sterile. P.M.—The placental attachment was extensive, mainly to the tissues of the right broad ligament. No peritonitis. The blood was remarkably fluid. Death from septicæmia.

TABLE IV—

No.	Name and date of admission.	Age.	Disease.	Operation.	Duration of residence.	Number of days after operation.
9	M. W., Dec. 8	32	Pelvic abscess, with spreading peritonitis	Drainage <i>per abdomen</i> and <i>per vaginam</i>	Days. 1	1
10	M. A. S., March 22	44	Fibro-myoma of cervix uteri	Panhysterectomy	4	1
11	C. H., Nov. 18	42	Fibrotic uterus	Vaginal hysterectomy	7	—
12	S. G., May 13	67	Carcinoma of cervix	Vaginal hysterectomy	10	3
13	M. K., Feb. 20	52	Carcinoma of both body and cervix uteri	Vaginal hysterectomy	15	12
14	E. L., Jan. 22	31	Albuminuria and vomit- ing in pregnancy	Induction of premature labour	17	2
15	G. J. D., March 24	24	Pontine hæmorrhage; tubular nephritis in pregnancy	Induction of premature labour	—	—
16	L. H., Sept. 20	39	Diffuse pelvic suppura- tion (puerperal)	Drainage <i>per vaginam</i> , Sept. 22; drainage <i>per</i> <i>abdomen</i> and <i>per</i> <i>vaginam</i> , Sept. 28	11	9
17	C. D., April 20	58	Carcinoma of sigmoid flexure; secondary in- volvement of left ovary and glands	Exploration of abdomen	14	8
18	S. S., Sept. 8	73	Sarcomatous cyst (of uncertain origin)	Exploration of abdo- men; evacuation of cyst; vaginal drainage	10	6

*continued.*

Cause of death and Remarks.

The abscess was due to curettage for retained products of conception. The patient was admitted in a very serious condition, with sunken eyes, rapid pulse, and distended abdomen. She only survived the operation twenty-four hours. Autopsy was refused.

The tumour was a large single interstitial growth of the cervix, weighing nearly 5 lb. It was tightly impacted in the pelvis, and was brought up with great difficulty, the hæmorrhage from a large raw surface being severe. Before the bleeding could be controlled the patient's condition was serious, and though she improved temporarily with saline infusion, etc., she died twelve hours after the operation. P.M.—Death from shock. No bleeding had occurred subsequent to the operation.

The operation was performed for profuse and continuous bleeding. Curettage had been tried, but had given no relief. The steps of the operation were the same as ordinarily employed at the hospital; that is, ligatures only were used and the vaginal roof was stitched; but at this point there was a difference from the usual technique as the pedicles on each side were sutured into the vaginal roof. The patient died suddenly the same night. P.M.—Body completely blanched. Peritoneal cavity full of blood and recent clot. The ligature controlling the left ovarian artery had slipped, and death was due to hæmorrhage from this vessel.

There was an extensive ulcerating growth of both lips of the cervix. The patient appeared to be doing perfectly well after the operation until the third day, when symptoms of peritonitis supervened. P.M.—Acute general peritonitis with sero-purulent exudation. Chronic mitral disease and slight atheroma of aorta. Cortex of kidneys diminished, capsule adherent.

The growth was of the glandular type, and in the lower part of the cavity was sloughing and very offensive. Progress after operation seemed quite satisfactory until 48 hours before death. The abdomen then became slightly distended and the breathing more rapid. The pulse was weak and the heart failed to respond to stimulants. P.M.—Collection of purulent fluid in the pelvis, and spreading peritonitis. Lobar pneumonia at the base of the left lung.

See Special Abstracts.

See Special Abstracts.

Confinement one month before admission. Pyrexia began the third day of the puerperium. P.M.—Abscesses in the wall of the uterus, in the right broad ligament, and in the peritoneal cavity on the left side of the pelvis. General peritonitis. Recent vegetations on the edges of the mitral valve.

The growth was found to be too extensive and adherent to pelvic wall to admit of removal. P.M.—Mass of growth involving pelvic colon, left ovary, and adjacent lymph-glands. The bowel was largely destroyed and showed several necrotic and perforated patches. There was fecal extravasation in the pelvis and general plastic peritonitis in the upper part of the abdomen. Secondary deposits in liver.

The contents of the cyst evacuated at the operation were examined microscopically, and the report from the Clinical Laboratory was "hæmorrhagic sarcoma." P.M.—Origin of the blood-cyst could not be traced. It did not arise from the uterus or its appendages. Some purulent fluid in pelvis and spreading peritonitis. The endometrium of the uterus was in a gangrenous, sloughing condition.

SPECIAL TABLE I.—*Abdominal*

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
1	E. C.	Walworth	25	M.	Feb. 3	Tubal gestation (left), ruptured; peritubal hæmatocele	Removal of left uterine appendages, mole, and blood-clot
2	A. R.	New Cross	29	M.	Feb. 6	Tubal gestation (right), ruptured; free intra-peritoneal hæmorrhage	Removal of right uterine appendages and blood-clot
3	M.A.E	New Cross	24	M.	Mar. 24	Tubal gestation (left), ruptured; intra-peritoneal hæmorrhage	Removal of left uterine appendages, foetus, and blood-clot
4	M. D.	Battersea	26	M.	April 13	Tubal mole (left); peritubal hæmatocele	Removal of left uterine appendages and hæmatocele
5	E. S.	Gravesend	28	M.	May 16	Tubal mole (right); peritubal hæmatocele	Removal of right Fallopian tube and hæmatocele
6	A. F.	Tooting	38	M.	May 27	Tubal mole (right); pelvic hæmatocele	Removal of right uterine appendages and blood-clot
7	S. H.	Brixton	43	M.	June 29	Tubal mole (left); pelvic hæmatocele	Removal of left uterine appendages, mole, and blood-clot
8	A. H.	Ewell (Surrey)	25	M.	Sept. 14	Tubal mole (left); pelvic hæmatocele	Removal of left Fallopian tube, mole, and blood-clot
9	C. R.	Wimbledon	31	M.	Oct. 31	Tubal gestation (right), with abortion and slight rupture; peritubal hæmatocele	Removal of right uterine appendages, mole, and blood-clot
10	R. D.	Greenwich	23	M.	Nov. 1	Tubal mole (right), with rupture of the tube; peritubal hæmatocele	Removal of right uterine appendages, mole, and blood-clot



## Section for Cases of Tubal Gestation.

Peritoneum flushed.	Drainage.	Result.	Remarks.
Yes	No	Disch.	The mole occupied the middle portion of the tube. Rupture had occurred in the posterior wall. The amniotic cavity was distinct. The fœtus was not found. Recovery quite uneventful.
Yes	No	Disch.	The fimbriated end of the tube was sealed. There was an extensive rupture, and opposite to this some firm dark clot was attached to the wall of the tube. No embryo was seen. A considerable number of clots as well as a quantity of fluid blood was removed from the peritoneal cavity in the course of the operation. Convalescence was uninterrupted.
Yes	Yes, per vaginam	Disch.	The infundibulum of the tube was occupied by a mass of clot, in which both amnion and chorion were distinctly seen. The rupture was $\frac{1}{2}$ in. in length. A small fœtus was found amidst the blood-clot lying free in the peritoneal cavity. There was some pyrexia and a very rapid pulse at the time of operation, and this continued for 10 days, after which recovery was rapid and uneventful.
Yes	No	Disch.	The mole was situated in the middle of the tube, and was firmly adherent to the wall. Microscopical examination at this spot demonstrated the presence of chorionic villi. The fimbriated end of the tube was open and surrounded by an encapsuled hæmatocel. There was no rupture. Recovery quite uneventful.
No	No	Disch.	The wall of the tube was continuous with that of the hæmatocel. The amniotic cavity was distinct. Convalescence uninterrupted.
Yes	No	Disch.	The mole occupied the ampulla of the tube, the wall of which was much thinned and ruptured at one spot. The amniotic cavity was found and within it a minute fœtus. Recovery uneventful.
Yes	No	Disch.	The fimbriated end of the tube was open, and there was no rupture. The ampulla was filled with clot but this was not attached to the tube wall. The clot in the isthmus of the tube had a definite attachment. No embryo was seen, but an amniotic cavity, or what appeared to be such, was present in the portion of clot in the isthmus. No microscopical examination for chorionic villi was made. Convalescence uninterrupted.
Yes	No	Disch.	The mole occupied the middle portion of the tube, the fimbriated end of which was open. The amniotic cavity was seen and what appeared to be the remains of an early embryo. Slight superficial suppurative of the abdominal wound at the lower end. Convalescence otherwise normal.
Yes	No	Disch.	The mole had been discharged from the open fimbriated end of the tube, the wall of which was continuous with the hæmatocel sac. There appeared to have been a slight rupture of the tube as well as tubal abortion. The amniotic cavity, cord, and shrivelled fœtus were seen. Recovery rapid and uneventful.
Yes	No	Disch.	The fimbriated end of the tube was closed. Rupture had occurred. The mole was still <i>in situ</i> . No amnion was seen, nor fœtus, but on microscopical examination chorionic villi were found. Convalescence uninterrupted.

**SPECIAL TABLE I—**

No.	Name.	Residence.	Age.	Civil condition.	Date of operation.	Nature of disease.	Nature of operation.
11	E. C.	Stockwell	25	M.	Nov. 14	Tubal mole (right), with tubal abortion; pelvic hæmatocele	Removal of right uterine appendages, mole, and blood-clot
12	G. K.	Wands-worth	42	M.	Dec. 4	Tubal mole (right); peritubal hæmatocele; lutein cyst of left ovary	Removal of both uterine appendages, mole, and blood-clot

*continued.*

Perito- neum flushed.	Drain- age.	Result.	Remarks.
Yes	No	Disch.	The mole had been extruded from the open fimbriated end of the tube. Fresh hæmorrhage was occurring at the time of operation. The specimen was unfortunately thrown away before complete examination. In the first hasty examination no fœtus or amniotic cavity was seen. The pulse was rather rapid for three days after the operation, but from this onwards recovery was uneventful.
Yes	No	Disch.	The mole had been partially extruded from the open fimbriated end, and in the process a certain amount of inversion of the tube had occurred. Neither fœtus nor amniotic cavity was seen, but the microscope revealed the presence of chorionic villi. A lutein cyst was present in the left ovary. Recovery rapid and uneventful.

## SPECIAL ANALYSES.

---

*Cysts of ovary* 30 cases ; 27 discharged, 3 died. For further details as to character of cysts, etc., see Table II and for fatal cases see Table IV.

Four of these cases were small ovarian cysts containing more or less altered blood and associated in all cases with extensive pelvic peritonitis. Short notes follow :

1. J. G—, æt. 36, married. Three children, no miscarriages. Last child born nine years ago. Main complaint on admission was of recurring attacks of severe pain in the right side and lower abdomen, shooting to the back and down the right leg. No alteration in menstruation or other symptoms. The uterus was pushed forwards and to the left by a mass the size of an orange, elastic in consistency, and fixed. On opening the abdomen there were found to be dense adhesions all round this cystic swelling, which contained dark, tarry, altered blood, with no offensive odour. After the cyst had been emptied the right uterine appendages were removed and the peritoneal cavity flushed with sterile water. The left ovary was normal. On examining the parts removed, the right ovary was seen to consist almost entirely of a thick-walled cyst with a smooth lining, the contents of which had been evacuated at the operation. The Fallopian tube was not thickened and its mucous membrane was normal. The peritoneal surface of the tube and the outer wall of the cyst were covered with many dense adhesions. Recovery was rapid and uneventful.

2. E. A—, æt. 33, married. One child and one miscarriage, the last eight years ago. Menstruation regular and not excessive. During the last twelve months the periods have been much more protracted than formerly, but the total loss has been little if at all increased. For the last six months there has been some abdominal pain on exertion and pain also on micturition. On the right side of the pelvis, in the situation of the right uterine appendages, was a swelling about the size of a hen's egg, with some mobility. There was a similar swelling on the left side, apparently adherent to the back of the broad ligament. On opening the abdomen the swellings were found to be of different origin. Both ruptured during the separation of adhesions. That on the right side was a blood-cyst of the ovary, on the left side it was a perimetritic cystoma. The right uterine appendages were removed. The left ovary was surrounded by a mass of thickened adherent bowel. It was left undisturbed. The right ovary showed normal ovarian tissue at one part and at another a cyst with thick, tough, fibrous wall and smooth

lining, the contents of which had been largely evacuated at the operation, and consisted of dark, gritty blood-clot, evidently of no very recent formation. The right Fallopian tube was normal. Convalescence uninterrupted.

3. H. J. D—, æt. 32, single. Nearly three years before admission patient had a severe attack of pain in the lower part of the abdomen, with considerable pyrexia. She was in bed three weeks. Again, two months before admission, she had a similar attack, but even more severe in character. Examination was difficult, and it was not possible to determine whether swellings felt to both right and left of the uterus were due to disease of the appendages or to the presence of subperitoneal fibroids. The partial fixation of both masses and tenderness suggested tubal disease, and there was certainly some pelvic peritonitis. On opening the abdomen it was clear that the masses were mainly subperitoneal fibroids. The left ovary was found imbedded in adhesions, and contained a small blood-cyst, which ruptured during the manipulations. There was a similar smaller cyst in the right ovary. Neither Fallopian tube was thickened or showed any evidence of salpingitis. The left uterine appendages were removed and the pelvis irrigated with normal saline solution. The blood-cyst in the ovary removed was the size of a walnut. Recovery from the operation was quite uneventful.

4. E. M—, æt. 35, single, maternity nurse. First attack of abdominal pain occurred three months before admission. A month later there was a second and more severe attack, with high fever, vomiting, and great tenderness. She was in bed ten days. A third but slighter attack occurred shortly before admission. A soft, elastic swelling could be felt filling the left side of the pelvis. The uterus was pushed over to the right and much impaired in mobility. On opening the abdomen there were found to be many adhesions, which were, however, recent and fairly easily separated. The cystic tumour felt on the left side ruptured during the manipulations, allowing of the escape of a considerable quantity of tarry altered blood. As there was seen to be a smaller blood-cyst in the right ovary also, both uterine appendages were removed. There was some pyrexia in the second week following the operation, but it soon subsided, and did not appear to be connected with the abdominal wound, which healed by first intention, or with the pelvis. The patient got up on the 19th day, by which time the temperature was normal and her general condition good.

*Malignant disease of ovary* 5 cases; 1 discharged, 4 died. For details of the latter see Table IV. In the one non-fatal case there was not only a malignant growth of the right ovary, partly cystic and partly solid, but also malignant disease of the body of the uterus. The ovarian growth was very friable. It had burrowed into the right broad ligament. The left ovary was normal, and as, owing to adhesions, it would have been difficult to remove, it was left *in situ*. The cavity of the uterus was considerably dilated and filled with growth, springing from the fundus and posterior and right lateral walls. The growth had invaded the muscle, and at the fundus had almost reached the peritoneum.

The report from the Clinical Laboratory was :

Ovarian growth—columnar-celled carcinoma.

Uterine growth—Carcinoma, probably squamous-celled.

*Salpingitis and pyosalpinx* 33 cases, all discharged. Abdominal section in 23 cases. None of the cases presented any features of special interest.

*Fibro-myoma of uterus* 42 cases, 41 discharged, 1 died. Pan- or total hysterectomy became towards the end of 1904 the operation of election, and of the 32 cases submitted to abdominal section in 1905 total hysterectomy was performed in 30 and the retro-peritoneal flap operation in 2 only.

In one case the uterine tumour was complicated by the presence of bilateral tubo-ovarian cysts.

M. R.—, æt. 46, widow, one child and one miscarriage. Three months before admission the patient, whose periods had been quite regular up to that date, had a severe flooding. The loss continued for three weeks, and was so copious as to keep her in bed. Two regular periods, not excessive in quantity, followed; but the third, which had only just ceased at the time of admission, was very free, and was described by the patient as a flooding, though not quite so severe in character as three months ago. On examination a rounded, firm tumour was felt reaching to the umbilicus, and somewhat tender to palpation. It was capable of only slight mobility. Pressure on the abdominal swelling caused a direct impulse to the cervix. Extending across the pelvis and occupying the posterior quadrant was an elastic swelling apparently fixed to the pelvic floor. It appeared to be due to the enlarged and adherent appendages occupying the lower part of the pelvis behind the uterus.

On opening the abdomen numerous adhesions were separated, and then the cystic swellings connected with the uterine appendages on both sides were shelled out. The broad ligaments were tied off and the uterus ablated. At first a portion of the cervix was left, but it was seen that better drainage could be obtained if it were removed. The abdomen was washed out with normal saline and closed in three layers. A drainage-tube was inserted in the vagina.

*Examination of parts removed.*—The uterus contained a single interstitial fibroid in its posterior wall the size of a foetal head. It was undergoing oedematous degeneration, and was of putty-like consistency. The left uterine appendages were represented by a large cyst. The Fallopian tube was obviously leading into the cyst, and the wall appeared to be formed in part by the ovary. Further proof of its tubo-ovarian character was furnished by its connection to the uterus by the ovarian ligament. Moreover there was no ovary apart from the cyst, and none had been left *in situ* during the operation. On the right side the cyst had been opened during removal, otherwise the appearances were exactly similar. The contents on both sides were clear translucent fluid.

Convalescence was uninterrupted.

For case of large fibromyoma undergoing necrotic, calcareous, and sarcomatous degeneration, see Special Abstracts.

*Cæsarian section* 2 cases, both discharged.

1. M. A. H—, æt. 29, married, 4 previous pregnancies. The history of these was as follows: First child, seven months' gestation, lived fifteen months; second child, full term, difficult labour, lived two years; third child, full term, difficult labour, child's head damaged, probably by the forceps, is now paralysed in one arm and epileptic; fourth child delivered by cephalotripsy.

Patient was admitted April 20th. The last period was July 25th, 1904. Cæsarian section was performed on April 25th. The os had just begun to dilate. The uterus was incised along the anterior wall. The child and placenta were delivered with very little hæmorrhage. The uterus was stitched in the usual manner with silk sutures, the deep stitches being buried by a superficial row of Lembert sutures. Portions of each Fallopian tube were removed. The child (a female) weighed just over 6 lb. Both mother and child did very well, and left the hospital twenty-five days after the operation in very good condition.

2. K. B—, æt. 30, married. When a small child patient had a fall and hurt her back. As she grew up it was noticed that one hip was higher than the other, and that she had a curvature of the spine. There had been three previous pregnancies, and in all three cases craniotomy had been performed, the delivery of a living child at term being impossible. The last craniotomy was done in the hospital in 1902. The diagonal conjugate was found to be only  $3\frac{1}{4}$  inches, the promontory of the sacrum being easily reached. When it was known that she was again pregnant it was arranged that she should be admitted for Cæsarian section in September. On August 27th, however, she was woke up by the escape of the liquor amnii. She was at once brought to the hospital. The os was dilated, and readily admitted three fingers. The head could be felt above the pelvic brim and could not be passed down into it. The abdomen was opened and the usual anterior incision made in the uterus. There was considerable hæmorrhage, as the incision had passed through the placental site. The child, placenta, and membranes were rapidly delivered. The uterus was stitched in the usual manner and portions of the Fallopian tubes removed. The child, a male, weighed just under 6 lbs. The mother's convalescence was uninterrupted, and both mother and child left the hospital eighteen days after the operation in very good condition.

---

## SPECIAL ABSTRACTS.

---

(A) Two cases of nephritis in pregnancy, both fatal, one from infection by the *Bacillus aerogenes capsulatus*, the other from pontine hæmorrhage.

**1. ALBUMINURIA AND VOMITING IN PREGNANCY; INDUCTION OF PREMATURE LABOUR; DEATH IN FORTY-EIGHT HOURS; INFECTION BY THE BACILLUS AEROGENES CAPSULATUS.**

E. L.—, *æt.* 31, married. Admitted January 22nd, 1905, died February 8th. Catamenia commenced at 14. Always quite regular, of the twenty-eight days type. Patient was married six months before admission. Her last menstruation occurred at the beginning of July, 1904. Soon after the cessation morning sickness began, and continued for three months. At the same time there was enlargement of the breasts. For the last three months patient has noticed increase in the size of her abdomen, and states that she felt "quickening" about the fourth month.

Five weeks before admission she had a severe attack of vomiting, being quite unable to keep any food down. This lasted for three days. It was followed a fortnight later by another very severe attack. The vomit was greenish-yellow and very bitter. At this time micturition became painful and frequent, and her urine darker in colour. Various remedies were tried, but without avail, and the vomiting continued till admission. The bowels were very constipated. The woman was distinctly emaciated. The pulse was rapid, 120 to the minute. The breasts were full and the veins swollen. The heart and lungs were normal. The uterus reached to a point one third of the way between the umbilicus and the xiphisternum.

The lower bowel was emptied by turpentine and simple enemata and the patient put on rectal feeding and Ingluvin (five grains every four hours).

The note on January 29th reads: "The vomiting has been much better since admission"; but on January 31st: "Vomiting a good deal to-day. There is a small trace of blood in the vomit."

The urine when examined on admission was dark in colour, acid in reaction, specific gravity 1014, thick deposit of urates, large cloud of albumen, no sugar, blood, or bile. Under the microscope a considerable number of pus and epithelial cells were seen.

Examined again later (shortly before death) the albumen was  $\frac{1}{2}$ , there was a large deposit of pus and numerous bacteria, chiefly agglutinated, no leucin or tyrosin.

The vomiting continuing it was decided to empty the uterus, and on February 6th the cervix was dilated with Hegar's dilators until two fingers could be passed. De Ribes' bag was then introduced. During the night the cervix was slowly dilating, and patient's general condition gave no cause for anxiety, but suddenly at 5 a.m. on February 7th she became blanched and collapsed, and for some time the pulse at the wrist could not be felt. Saline infusion was resorted to and her condition improved for a time. At 10.30 a.m. chloroform was given and the patient rapidly delivered, the cervix being fully dilated. The woman's condition was obviously very serious; the temperature was 102.5° and the pulse 160 to the minute. Respirations were also very rapid. The conjunctivæ were slightly jaundiced. There had been a marked change noticed in her mental condition and increasing restlessness. For a short time after delivery there was some



improvement, particularly in her mental condition, and she talked sensibly to those around her, but in the early morning of February 8th she again collapsed and required a saline infusion of six pints. Later in the day she became comatose, with dilated pupils, stertorous breathing, dry tongue, etc. Black blood was present in the stools and jaundice was evident shortly before death, which occurred at 3.30 p.m.

*Autopsy* (February 9th).—General emphysema of the subcutaneous tissue and muscles. The neck was extremely swollen from the presence of gas in the tissues. The abdominal cavity was distended with gas, and there were gas-bubbles in the parietal pleura and pericardium. All the organs were examined, but the general emphysematous condition made it difficult to detect special lesions.

The *uterus* was enlarged and flabby. The walls contained gas-bubbles. The mucous membrane was irregular and thickened.

The *kidneys* were extremely spongy, so that it was difficult to detect other changes. In the cortex of the right kidney there were apparently some minute abscesses. The ureters were somewhat dilated.

The *liver* was of a bright yellow colour and in an extremely spongy condition, bearing an exact resemblance to an indiarubber sponge.

The *spleen* was engorged and spongy.

The *lungs* were congested and œdematous. There were gas-bubbles beneath the pleura.

The *brain* itself was normal, but there were gas-bubbles in the sinuses and blood-vessels, and also in the pia mater.

Portions of the liver and kidneys were examined microscopically. The following is the report from the Pathological Laboratory :

*Liver*.—The liver shows large numbers of gas cysts. Large numbers of *Bacillus aerogenes capsulatus* are seen in the cysts and in the vessels and connective tissue.

*Kidneys*.—There is some tubular nephritis with hyaline casts. There are large numbers of gas-cysts with *Bacillus aerogenes capsulatus*.

## 2. PREGNANCY WITH TUBULAR NEPHRITIS; HÆMORRHAGE INTO THE PONS; ADMITTED COMATOSE; RAPID DELIVERY; DEATH LESS THAN FOUR HOURS AFTER ADMISSION.

G. J. D.—, æt. 24, married. Admitted and died, March 24th, 1905. This was the first pregnancy. During March 21st she sent up her maternity card, and was reported by the obstetric clerk to be "not in labour." She was about five and a half to six months pregnant, and was complaining of slight headache, seeing spots before her eyes, and swelling of the face and legs. A specimen of urine was obtained and examined on the 23rd, and found to be nearly solid with albumen. At 1.40 a.m. on the 24th a message was received that the patient was in a fit, the first she had ever had. When seen she was in a comatose condition, and was immediately sent up to the hospital on an ambulance and admitted at 3 a.m. The face was pale and the pupils equal and of medium size. There was no corneal

reflex. There was œdema of the lower eyelids and marked œdema of the legs. The pulse was slow (80) and of high tension. There was marked Cheyne-Stokes respiration. The fundus of the uterus was at the level of the umbilicus and the foetal heart sounds were heard. The respiration gradually became shallower, the pulse was still slow and of markedly high tension. Bleeding was resorted to and 10 oz. withdrawn. The cervix was then dilated with Hegar's dilators to begin with, and subsequently with De Seigneux's modification of Bossi's instrument, the dilatation being carried to the full extent of the instrument in about twenty-five minutes. A leg was then brought down and the child delivered. The placenta was removed by hand and an intra-uterine douche given. During delivery strychnine was given hypodermically and a saline infusion of four pints. Slight laceration of the cervix occurred, but there was no severe bleeding from this nor from the placental site. The patient remained comatose throughout. She had, indeed, never been conscious since the first fit at 1.30 a.m. Death occurred at 6.45 a.m.

*Autopsy* (March 25th).—There was some anasarca, especially of the lower limbs. There was also some ascites. Both pleural cavities contained some excess of clear fluid. The lungs and heart were normal.

The *kidneys* were not much altered to the naked eye. The cortex was pale and fatty and the pyramids distinct. The capsules stripped easily, leaving a smooth surface. There were no signs of pressure on the ureters.

*Liver*.—There were numerous red areas scattered through the liver, both under the capsule and deep in its substance. These areas resembled capillary nævi, but did not appear as distinct growths, but rather as local areas of dilatation of the hepatic capillaries.

*Brain*.—There was an extensive hæmorrhage into the substance of the pons, which was greatly torn and disorganised. The hæmorrhage passed up for a short distance into the crura cerebri. The rest of the brain was normal. There was no evident disease of the cerebral arteries.

The kidneys and liver were examined microscopically. Report from the Pathological Laboratory:

*Kidney*.—This shows cloudy swelling of the tubular epithelium. There are a few casts. There is also slight fatty degeneration of the epithelium.

*Liver*.—This shows large numbers of capillary angiectases.

(B) Four cases in which the parts removed were of peculiar interest:

1. A LARGE MULTILOCULAR CYSTIC TUMOUR WITH SOLID FIBRO-MYOMATOUS PORTION; SITUATED BETWEEN THE LAYERS OF THE RIGHT BROAD LIGAMENT; ABDOMINAL SECTION; REMOVAL OF THE TUMOUR, WITH BOTH UTERINE APPENDAGES; RECOVERY.

M. A. Y—, æt. 45, married. Admitted July 17th, discharged August 18th. A healthy, well-nourished woman, complaining that a fortnight ago she was seized with severe pain in the left iliac region, and at the same time noticed a lump in the lower part of the abdomen. The pain has been constant since, and has prevented the patient from getting much sleep. There has also been frontal headache and at times faintness and dizziness.

The tumour has been of the same size since first noticed. Micturition and defæcation have both been painful for the last four or five days. Catamenia began at fourteen, and were regular till a year ago, since when they have been rather profuse, with only a fortnight's interval. During this time also there has been slight bleeding between the periods. Patient has been married seven years, but has had no children nor miscarriages.

The abdomen was very tender to palpation. A large mass could be felt on the right side extending nearly up to the umbilicus, with an uneven and knobbed surface. There was a smaller, hard mass low down on the left side. The cervix was looking downwards in the vaginal axis. Behind and to the right the vaginal roof was depressed by a firm, fixed mass, which completely filled up the posterior part of the pelvis, and extended across to the left posterior quarter. Pressure on this mass caused pain. The uterus was apparently pushed forwards and to the left, and was capable of slight mobility. The tumour in the pelvis was absolutely fixed. The tender mass on the left-hand side of the abdomen was continuous with the left cornu of the uterus. The heart and lungs were healthy. Urine normal.

*Operation* (July 20th).—An incision was made over the left rectus below the umbilicus and the muscle retracted. The patient was in the Trendelenburg position. When the peritoneum was opened many adhesions were found between the omentum and intestines and the tumour. While separating adhesions around the left ovary a suppurating cyst was opened. The pus was sponged out of the abdominal cavity. On exploring the right side a large tense cyst was seen in the neighbourhood and attached to a portion of the right ovary. This was dissected away and removed. The right broad ligament was seen to contain several cysts varying in size. At the bottom of the pelvis and between the uterus and the cysts was felt a hard mass connecting the cysts together. The collection of cysts and the hard mass were removed in one piece. The uterine appendages on both sides were also removed. The tissues of the pelvis were found to be very soft and œdematous, and suturing of the peritoneum impossible, so an incision was made into the pouch of Douglas from the vagina and a drainage-tube inserted. The abdominal cavity was thoroughly irrigated with saline and the incision closed in three layers.

*Parts removed.*—The main mass consisted of a collection of five cysts which appeared to communicate with one another and to be connected with the solid portion mentioned in the operation. The whole tumour measured  $4\frac{1}{2}$  by 3 inches. The cysts were fairly tense and appeared to contain thin serous fluid. On incising the hard mass the section had a fibromatous appearance. As mentioned before, this mass was enucleated from between the layers of the broad ligament. It is difficult to speak as to its origin, whether from the right ovary or from the parovarian. No further incisions into it were made, as it is to be preserved in the museum.

Apart from the main mass there was removed from the right side of the Fallopian tube, a very small portion of ovarian tissue attached to the tube, and a cyst with thin, smooth wall, but containing some papillomatous outgrowth. This was the cyst mentioned as removed early in the operation.

It undoubtedly arose from the right ovary. The mucous membrane of the tube was congested, but it was otherwise normal. The left Fallopian tube showed signs of acute on the top of chronic salpingitis, the mucous membrane was congested and œdematous, and the wall was thickened to the extent of half an inch. The ovary contained a cavity which had been opened during the course of the operation and had discharged pus.

After-progress was very satisfactory for ten days, when there was a rise of temperature due to some inflammatory thickening on the left side. This quickly subsided, and the patient was up on August 13th, the temperature having been normal for several days, and left the hospital five days later.

**2. FIBRO-MYOMA OF UTERUS, UNDERGOING NECROTIC, CALCAREOUS, AND SARCOMATOUS DEGENERATION; ABDOMINAL SECTION, PANHYSTERECTOMY; COMPLETE REMOVAL OF SECONDARY NODULES NOT POSSIBLE; RECOVERY FROM THE OPERATION; DEATH FIVE MONTHS LATER.**

K. M.—, æt. 35, single. Admitted September 27th, discharged November 6th. Catamenia began at thirteen, regular, of the twenty-eight days type, with seven days' loss. No notable departure from this menstrual type occurred until May, 1905, from which period the history of the present illness dates. Then excessive loss began and the interval between the periods became less and less. At the same time the patient began to lose flesh and to complain of pain in the right side, particularly at night. It was sufficiently severe to prevent sleep. For this she took medical advice, which led to the recognition of the tumour. During the last month previous to admission the mass had greatly increased in size. Micturition was normal. There was some yellow, inoffensive discharge in the intervals between the losses. On examination the abdomen was protuberant and dome-shaped, the skin tense, the umbilical depression nearly obliterated. On palpation a tense, inelastic tumour could be felt rising from the pelvis and extending upwards to a point midway between the xiphisternum and the umbilicus. Laterally it reached well into the flanks. The mobility of the tumour was extremely slight. The surface was generally smooth, slightly notched along its superior margin, and with a small secondary nodule close above the pubes. Anteriorly there was absolute dulness to percussion and the note in the flanks was much impaired.

The heart and lungs were healthy. Urine normal.

At a later date it is noted that a bar could be felt on abdominal palpation transversely disposed above the tumour, apparently free from the main mass and capable of some side to side movement. On vaginal examination the cervix was felt high up and to the left. The right and anterior fornices were bulged down by a nodular mass continuous with the right side of the abdominal tumour. There was a considerable amount of fixation of this mass in the pelvis.

*Operation* (October 5th).—Incision six inches in length a little to the left of the middle line. The bar referred to above was seen to consist of two large bosses, one on each side. On the left side of the pelvis the tumour was found to be free, but on passing the hand down on the right side a

portion of the tumour more irregular and more friable than the rest could be felt burrowing into the broad ligament and towards the vagina. This caused the whole growth on the right side to adhere to the pelvic wall. It was decided notwithstanding to remove the uterus. The adhesions having been broken down and the wound enlarged, the tumour was delivered out of the abdomen. The broad ligaments were ligatured and the operation of total hysterectomy performed. Both uterine appendages were removed with the tumour. It was then found that there were many small nodules the size of a marble adherent to the mesentery in the left iliac fossa. These were not removed, as the condition of the patient would not allow of such treatment. The peritoneum over the floor of the pelvis was sutured with catgut and the abdominal wall closed in three layers.

*Parts removed.*—The weight of the whole mass was 4 lb. 8 oz.

The tumour was irregular in shape, there being two well-marked bosses at the fundus, one or two scattered over the surface, and a very large mass almost separate from the uterus below and on the right side. This lower part of the tumour was softer, more vascular, and more diffuent than the rest.

On incising the posterior wall of the uterus the growth was seen to extend from the sub-peritoneal protuberances through the muscular wall into the cavity of the uterus, which was dilated and filled by a polypoid mass, sloughing on the surface. The section made by the knife was flat and varied in colour. It was waxy or lardaceous in appearance at the fundus, but more vascular in the body of the uterus. In the wall was a separate nodule about the size of a walnut which was firm and white externally, but in the centre contained red diffuent material.

The uterine appendages were normal.

Three portions of the tumour were examined microscopically—from the fundus, from the cavity of the uterus, and from the lower, softer, more vascular portion of the tumour. The report on the first two sections was: "Fibro-myoma, large area of necrosis present, slight calcification seen, cells and cell-nuclei typical, no evidence of sarcoma." On the third section the report was: "Spindle-celled sarcoma."

The wound healed by first intention, and the recovery from the operation as such was perfect, but there was rapid recurrence of growth. The patient was admitted to the cancer wards of the Middlesex Hospital two months after her discharge from St. Thomas's, and died there on February 25th. The abdomen was then full of growth, and there were secondary nodules in liver, lungs, and retro-peritoneal glands.

*Note.*—The tumour was shown at the Obstetrical Society of London, and the subsequent history and result of the autopsy also recorded. (See 'Transactions,' vols. xlvii and xlviii).

### 3. GENERALISED FIBROSIS OF UTERUS, WITH CALCIFICATION OF VESSELS; SMALL FIBRO-MYOMATA; ABDOMINAL SECTION; PANHYSTERECTOMY; RECOVERY.

M. W—, æt. 50, married. Admitted April 20th, discharged May 27th. An anæmic woman, complaining of a tumour in her abdomen, associated

with severe hæmorrhage. The lump in her abdomen was first noticed five years ago. It has been getting slowly but steadily larger ever since. Menstruation began at 13. It was regular until three years ago. There have been nine pregnancies, eight children and one miscarriage. During the last three years the patient has suffered from menorrhagia, which has been gradually getting worse, and during the last five months she has lost very considerable quantities of blood. The periods of late last sometimes eight days, sometimes fourteen, and three times the hæmorrhage has continued for as long as twenty-one days.

The abdomen was distended. There was a large, hard mass rising out of the pelvis in the middle line. It extended to just above the umbilicus, and was freely movable. No part of the tumour entered the pelvis. The cervix projected normally, and tumour and cervix moved together.

*Operation* (April 28th).—This consisted of a straightforward total hysterectomy, and presented no features of special interest. The uterine arteries were noticed as they were ligatured to stand out very clearly and to be markedly tortuous.

*Description of parts removed.*—The uterus was enlarged to the size of a cocoanut. It weighed 2lb. 11 oz. On sectioning it the wall was seen to be of a very great thickness, and measured  $2\frac{1}{2}$  inches from mucous surface to peritoneum. It was exceedingly tough to the knife. There were one or two small interstitial fibroids in the posterior wall, but for the most part the naked-eye appearance suggested a general fibrosis, there being no differentiated tumour. The cavity was enlarged and measured  $5\frac{1}{2}$  inches from external os to fundus. Nothing abnormal could be seen in the endometrium.

The microscopical report was "Distinct increase of fibrous tissue present, and also calcification of some of the uterine arteries."

Recovery was uneventful.

*Note.*—The specimen was shown at the Obstetrical Society of London (See 'Transactions,' vol. xlvii).

#### 4. CARCINOMA OF CERVIX; SMALL FIBROIDS AND ADENOMYOMA OF THE BODY OF THE UTERUS; PELVIC PERITONITIS; COMBINED VAGINO-ABDOMINAL HYSTERECTOMY, WITH REMOVAL OF THE RIGHT UTERINE APPENDAGES; RECOVERY.

A. N—, æt. 37, married. Admitted April 12th, discharged May 23rd.

Patient was married eighteen years ago, and had one child, stillborn, eleven months later. No other pregnancies. Menstruation was regular until two years ago, since when it has become much more profuse, lasting ten days, and preceded for two or three days by aching pain in the lower abdomen. During the last two months these symptoms have become aggravated, and the menstrual discharge has become brown and offensive. Between the periods there has been some white discharge, but never offensive or blood-stained, nor has there been bleeding during intercourse. There has been a considerable loss of flesh in the last twelve months.

On examination of the abdomen a mass could be felt coming up from the pelvis in the middle line, and reaching half way to the umbilicus. It was

tender to palpation, but mobile. The whole of the right iliac region was more or less rigid and tender, but nothing definite could be felt there.

The heart and lungs were healthy. Urine normal.

*Per vaginam.*—The cervix was considerably enlarged and very hard. The cervical canal was slightly patulous, and the wall of the canal just inside the os was tender and granular. It was also friable, and bled rather freely on examination. The uterus was enlarged by a number of fibroids. It appeared fairly mobile.

*Operation* (April 20th).—With the patient first in the perineal position the cervix was pulled down and its lips sutured. The vaginal mucous membrane was then incised round the cervix, the bladder separated, and the bases of the broad ligaments ligatured. The patient was then changed into the Trendelenburg position, and the abdomen opened to the left of the mid line. The uterus was found to be bound down by adhesions, which were separated with some difficulty. The right Fallopian tube was dilated, and consequently the right appendages were removed with the uterus. The peritoneum over the vaginal roof was sutured, and the abdomen closed in the usual way. A gauze drain was left in the vagina.

*Description of parts removed.*—The cervical canal had been treated with iodine before the lips of the cervix were sewn up, and consequently the granular new growth felt on examination was not very obvious to the naked eye after removal. Microscopical examination demonstrated however that it was a squamous-celled carcinoma. The cavity of the uterus was not much enlarged and the endometrium was smooth. Numerous fibroids, mostly subperitoneal, were present. All were healthy on section. In the right cornu of the uterus was a firm, hard portion which had no definite outline such as is usual in fibro-myomata. It suggested adenomyoma, even to the naked eye, and this diagnosis was confirmed upon microscopical examination. The right Fallopian tube was dilated, and contained some muco-purulent fluid. The wall was thickened. The ovary was oedematous, otherwise normal.

The early convalescence was normal, but on May 7th there was a sudden, sharp hæmorrhage. It lasted about ten minutes, and ceased as suddenly as it began. There was no recurrence of hæmorrhage, but considerable pain and tenderness in the lower abdomen on the left side. The following note was made when patient was leaving the hospital: "The vaginal wound is well healed and not tender. There is a mass about two fingers' breadth in thickness in the region of the left broad ligament. It is freely mobile."





# REPORT OF

## THE OBSTETRICAL DEPARTMENT

### FOR 1905.

---

**By JOHN S. FAIRBAIRN, M.A., M.B., B.Ch.Oxon.,**  
**OBSTETRIC PHYSICIAN TO THE HOSPITAL WITH CHARGE**  
**OF OUT-PATIENTS.**

---

THE JUNIOR OBSTETRIC HOUSE PHYSICIANS FOR THE YEAR WERE MESSRS.  
 E. W. PARRY, N. C. CARVER, E. E. MOSSOP, J. M. WYATT, and R. E. WHITING.

---

THE statistical tables for this report have been prepared from a report by each House Officer covering the period of his charge of the district.

The number of women attended in the maternity department from January 1st, 1905, to December 31st, 1905, was 1959, *i.e.* 93 less than during the preceding twelve months. A few cases of threatened abortion and those returned as "not in labour" are not included in this total.

The cases are made up as follows :

Single births . . . . .	1877
Twin births . . . . .	27
Abortions . . . . .	55
	<hr style="width: 10%; margin: 0;"/>
	1959

The number of the cases in which the child was born in the absence of the obstetric clerk was proportionately about

# 410     *Report of the Obstetrical Department for 1905.*

the same as in the previous year, being 878; these cases are excluded from consideration in the classification of the presentations.

The various presentations that occurred are shown in the following classified list :

Vertex . . . . .	1002
Breech . . . . .	40
Face . . . . .	3
Transverse . . . . .	7
Not stated (including "born before arrival" cases) . . . . .	879
Children born . . . . .	1931

The positions of the vertex observed were :

L.O.A. . . . .	730
R.O.A. . . . .	215
R.O.P. . . . .	24
L.O.P. . . . .	82
Not stated . . . . .	1
	1002

Of the 24 R.O.P. cases, 15 were stated to have undergone an anterior rotation, while 9 remained unreduced; in the L.O.P. cases the numbers were 16 reduced and 16 unreduced.

Of the 40 breech cases 4 were described as footlings.

FORCEPS was employed to assist delivery in 31 cases; and

VERSION was performed in 8 cases.

In no case was any operation for destruction of the child necessary.

CHILDREN BORN.—1931 viable children were born during the year, and 83 of them were still-born. Of these 19 were macerated, 7 were premature, 1 was a monster (sympus minopus), 1 anencephalic, and 1 hydrocephalic; 7 occurred among the breech presentations, 2 among the transverse presentations, and 5 were cases of prolapse of the cord. In 5 the labour was prolonged and instrumental delivery was necessary; in 1 case the mother was suffering from cirrhosis of the liver and ascites, and in another, where

no reason for the still-birth could be found, the two previous labours had resulted in the same way.

**MATERNAL DEATHS.**—During the year there were 3 maternal deaths. The following are the short notes of the cases :

1. The patient was found lying in a pool of blood and moribund ; she had been seen by an obstetric clerk ten days before, and again eighteen hours before, but had not had more than a slight "show," and there was no history of any previous hæmorrhage. On this occasion she had been slowly bleeding for twelve hours, but had not sent for assistance. The case was found to be one of placenta prævia, so a de Ribes' bag was inserted, and the child delivered without further bleeding. Intra-venous saline infusion was done, and other means adopted to combat the shock and collapse, but the patient died in a few hours after delivery.

2. The woman was an 8-para, æt. 38, whose previous labours had been somewhat prolonged, but otherwise not abnormal. After labour had been in progress some few hours with strong pains, and the head had descended into the pelvis, the patient complained of sudden acute pain in the epigastric region, and vomited several times. The labour pains then ceased entirely, and there was slight hæmorrhage from the vagina. Pulse 100, temperature 100·4° F. When the patient was seen by the obstetric house officer the abdomen was quite flaccid, and the child was easily felt through the abdominal wall. The presenting part had receded, and the child appeared to be lying free in a very relaxed uterus. There was a considerable tear in the left of the cervix, but it did not extend into the body of the uterus ; the cord was prolapsed and not pulsating. Internal version was performed without the slightest difficulty and a leg brought down. As there was no sign of uterine activity the case was left to nature. In four hours labour pains returned and the body was born with very little assistance, but there was difficulty with the after-coming head, which was eventually extracted with forceps. The placenta came away easily, and there was very little hæmorrhage, but the patient's condition did not improve, both the pulse and respiration rate rising. About twelve hours after labour the

patient was admitted to hospital; she then had signs of peritonitis, but her condition seemed too grave to admit of operation; some improvement took place, but was not maintained, and she died six days after admission. Post mortem there was an extensive tear on the left side of the cervix extending into the cellular tissue, with a small opening into the peritoneal cavity. Infection through this had given rise to a general peritonitis.

3. The patient was a primipara who had had inefficient pains for three days, so that the os had scarcely begun to dilate. The patient was not seen again for two days as the pains had not been severe enough to make her think that matters were progressing, and she had not sent up for help. When she did so the clerk was told that pains had come on strongly some twelve hours previously, and that with them she felt "something hard between the front and back passages." As the head was on the perinæum, and had apparently been there for over twelve hours, the clerk at once sent for his superior officer, and on the arrival of the latter the head was easily delivered by expression. The child was born dead, but not macerated, and was covered with a dark and very offensive material (? meconium). There was considerable post-partum hæmorrhage, and the placenta had to be removed by hand; the condition of the patient was now so serious that a subcutaneous infusion of normal saline solution was given with very satisfactory results. The placenta, when removed, was in a partially decomposing condition and of a dirty-brown colour. At first the patient made very good progress, but on the evening of the second day the temperature rose to  $100.3^{\circ}$  F., and on the following evening reached  $103^{\circ}$  F. At this time a large, dark-grey slough was noticed on the posterior vaginal wall. Douches of hydrogen peroxide were tried, but as the condition did not improve the patient was admitted to hospital. No improvement followed, in spite of energetic local treatment, the temperature taking on a remittent type, rising to  $104^{\circ}$  F. at night, with frequent rigors. The vaginal condition improved considerably, but an offensive discharge from the uterus continued in spite of frequent intra-uterine douches, and on the tenth day of the puerperium the patient died. Post

mortem the uterus was found to be enlarged, reaching to half-way between the pubes and umbilicus; the endometrium was green and sloughing, but there were no placental remains or other material in the uterine cavity. The uterine walls were infiltrated with pus, and numerous small abscesses were present.

**COMPLICATED LABOUR.**—The following short notes show the number of cases and treatment of some of the complications of labour.

**PLACENTA PRÆVIA.**—Seven cases were met with. In 5 the insertion of the placenta was described as marginal, in 1 as lateral, and in 1 as central. De Ribes' bag was used in 5 cases, and was followed by version in 2; in 1 case there was very slight ante-partum hæmorrhage, and rupture of the membranes, followed by forceps, was the treatment adopted; in 1 case there was no hæmorrhage, and the condition was not recognised by the obstetric clerk till the placenta appeared at the vulva in advance of the head, where it was arrested till the head and body passed and was then born simultaneously with the feet. When treatment was begun in the case of central placenta prævia the patient's condition was extremely serious, the pulse rate being 160. A bag was put in, and was not expelled for twelve hours, the child being born without assistance immediately after its expulsion; the mother made an excellent recovery. One mother died (see Maternal Death, No. 1), and 2 of the children were stillborn.

**ACCIDENTAL HÆMORRHAGE.**—There were 6 cases of accidental hæmorrhage, in all of which the mothers recovered. The cases were for the most part slight, but in 1 the patient was for some time in an extremely serious condition, and on two different occasions had intra-venous saline infusion. The placenta in this case was removed by hand, and found to be attached to the upper uterine segment.

**POST-PARTUM HÆMORRHAGE** was noted on 16 occasions, but in most of them was not of great severity, and was soon controlled; in 1 case it followed the birth of twins, and did not occur till half an hour after the placenta was born.

**ECLAMPSIA.**—One case occurred in a woman five months pregnant, who was admitted to Adelaide Ward in a comatose state; as she was not in labour the case is recorded in the Report of the Gynæcological Department (*cp.* 401).

**PURPERAL MANIA.** — Two women developed puerperal mania, 1 on the ninth and the other about the fourteenth day of the puerperium. In the case of the first there was no sign of sepsis; in the second there was fever with bronchitis and delirium followed by mania.

**STATISTICAL REPORT**  
**OF**  
**THE OPHTHALMIC DEPARTMENT**  
**FOR THE YEAR 1905.**

---

By **F. R. ELLISTON WRIGHT, M.B.LOND.,**  
**SENIOR OPHTHALMIC HOUSE SURGEON TO ST. THOMAS'S HOSPITAL.**

---

DURING the year January 1st, 1905, to December 31st, 1905, there were 3022 new out-patients—990 males and 2032 females—exclusive of 1247 casualty cases. The total number of attendances was 8609—2996 males and 5613 females.

In the same period there were 270 admissions, relating to 134 males and 136 females.

191 major operations were performed.

*General Statement of Ophthalmic In-patients.*

Number of beds in Ophthalmic Ward (including small ward and four cots)	25
Number of patients in ward Jan. 1st, 1905	... .. 9 males and 8 females.
.. .. Dec. 31st, 1905	... .. 13 .. 11 ..

## ANALYSIS OF PATIENTS—

	Discharged.	Died.	Total.
Males ... ..	129	0	129
Females ... ..	131	0	131
	<u>260</u>	<u>0</u>	<u>260</u>

## Table of In-patients.

*Eyelid.*

Entropion of . . . .	4
Ectropion of . . . .	3
Wound of . . . .	3
Meibomian cyst . . . .	1
Rodent ulcer of . . . .	1
Sebaceous cyst . . . .	1
Nævus . . . .	1
Vaccinia . . . .	1
Ptosis . . . .	1

*Lacrimal apparatus.*

Abscess . . . .	5
Mucocele . . . .	4
Obstruction . . . .	2

*Ocular muscles.*

Convergent strabismus . .	6
Paralysis of external rectus .	1

*Globe.*

Wound of . . . .	18
Blind painful eye . . . .	1
Sympathetic ophthalmia . .	1
Results of sympathetic ophthalmia . . . .	1

*Glaucoma.*

Acute . . . .	3
Chronic . . . .	8
Secondary . . . .	7

*Buphthalmos* . . . . 1*Conjunctiva.*

Trachoma . . . .	4
Membranous conjunctivitis .	1
Ophthalmia neonatorum . .	2
Papilloma . . . .	1
Chronic blepharo-conjunctivitis	1
Wound of . . . .	1

*Cornea.*

Perforating wound of . .	14
Keratitis, ulcerative . .	19
" with hypopyon . .	12
" recurrent . . . .	1
" interstitial . . . .	8
" "strumous" . . . .	8

*Cornea, cont.—*

Sclero-keratitis . . . .	1
Burn of . . . .	1
Anterior staphyloma of . .	1

*Iris.*

Iritis . . . .	11
Iridocyclitis . . . .	4
Results of iritis . . . .	7
Miliary tuberculosis of . .	1
Iridodialysis . . . .	1

*Choroid.*

Sarcoma of . . . .	2
Choroiditis, syphilitic . .	1
Hæmorrhage into . . . .	1

*Vitreous.*

Opacity of . . . .	1
--------------------	---

*Retina.*

Detachment of . . . .	3
Glioma of . . . .	1
Hæmorrhage in . . . .	1

*Optic nerve.*

Atrophy, primary . . . .	1
" secondary . . . .	1

*Lens.*

Cataract, traumatic . . . .	5
" senile . . . .	28
" lamellar . . . .	2
" congenital . . . .	3
Dislocation of . . . .	1

*Errors of refraction.*

High myopia . . . .	1
---------------------	---

*Orbit.*

Cellulitis of . . . .	6
Œdema of . . . .	1
Recurrent sarcoma in . . .	1

*Episcleral growth* . . . . 1*Ciliary staphyloma* . . . . 1*Bitemporal hemianopia* . . . . 1*Exophthalmic goitre* . . . . 1*Membrane in pupil after cataract extraction* . . . . 4



*Table of Operations performed.*

<b>Eyelid.</b>		<b>Cornea.</b>	
Rodent ulcer excised . . . . .	1	Cauterisation (with galvano-cautery) . . . . .	2
Sebaceous cyst excised . . . . .	1	Paracentesis . . . . .	2
Suture of . . . . .	3	Incision of, with removal of hypopyon . . . . .	4
Entropion . . . . .	3		
Ectropion . . . . .	5	<b>Iris.</b>	
Nævus . . . . .	1	Iridectomy preliminary to ex-	
For ptosis . . . . .	1	traction . . . . .	6
<b>Lacrymal apparatus.</b>		„ for results of iritis . . . . .	9
Sac excised . . . . .	1	„ for prolapse of . . . . .	14
Opening canaliculi . . . . .	3	„ for glaucoma. . . . .	12
Abscess . . . . .	6	Division of anterior synechia . . . . .	1
Dilatation of nasal duct . . . . .	4		
<b>Ocular muscles.</b>		<b>Lens.</b>	
Advancement with tenotomy . . . . .	2	Discission (lens and membrane) . . . . .	24
Tenotomy . . . . .	4	Curette evacuation . . . . .	4
<b>Globe.</b>		Extraction . . . . .	29
Excision . . . . .	36	<b>Sclerotic.</b>	
Evisceration, Mules' operation . . . . .	1	Sclerotomy . . . . .	2
Exploration for foreign body . . . . .	1	Sclero-puncture . . . . .	2
<b>Conjunctiva.</b>		<b>Orbit.</b>	
Expression for trachoma . . . . .	4	For cellulitis of . . . . .	2
Excision of superior fornix . . . . .	2	For secondary sarcoma of . . . . .	1

*Table of Anæsthetics.*

Cocain . . . . .	69
Chloroform . . . . .	83
Ether . . . . .	9
Ethyl chloride and ether . . . . .	26
Ethyl chloride . . . . .	2
A.C.E. mixture . . . . .	7

In the year three cases of (non-diphtheritic) membranous conjunctivitis were treated.

The first as an out-patient was unfortunately not examined bacteriologically.

The second as an in-patient under Mr. Lawford, R. S—, No. 97 in volume 1905. Bacteriological examination by Dr. Dudgeon showed almost a pure culture of a delicate gram-negative streptococcus. Rapidly pathogenic to mice when injected into the peritoneal cavity, producing death within twelve hours. The cultural characters of the organism were fully worked out by Dr. Dudgeon.

The third case as an out-patient was bacteriologically examined by Dr. Dudgeon, who found a similar gram-negative streptococcus with a sarcina. Unfortunately, the sarcina outgrew the streptococcus in cultures, rendering certain identification with streptococcus found in second case impossible.

All three cases were in children under seven years of age.

In the second case (R. S—) the cornea was affected, and there was considerable haze when the child left the hospital after a month's treatment. In the other two cases there was no affection of the cornea.

No. in vol. 1905.	Report No.	Name and date.	Sex.	Age.	Anæsthetic.	Operation.
1	1	E. M. Feb. 16th	F.	71	Cocain	Left extraction; previous preliminary upward iridectomy
19	2	G. W. Feb. 16th	M.	55	CH Cl <sub>3</sub>	Right extraction, with iridectomy. Some difficulty in expressing lens. Lens rather sticky
19	2	G. W. Aug. 1st	M.	55	Cocain	Left extraction, with iridectomy
28	3	J. S. Mar. 9th	M.	55	„	Right extraction, with iridectomy
45	4	R. S. April 18th	F.	49	„	Right simple extraction. Iris did not replace well
53	5	A. J. May 5th	F.	35	„	Left simple extraction; cortical part of lens soft
63	6	W. N. July 6th	M.	66	„	Right extraction, with iridectomy. Patient the subject of extreme gouty changes
69	7	H. B. July 7th.	M.	74	„	Left extraction, with iridectomy
80	8	E. C. Aug. 10th	F.	31	„	Right simple extraction; iris easily replaced
92	9	A. A. Oct. 5th	M.	39	„	Right simple extraction; iris easily replaced
108	10	M. R. Dec. 7th	F.	70	„	Right extraction, with iridectomy. Some soft lens matter
112	11	A. P. Nov. 30th	F.	46	CH Cl <sub>3</sub>	Left downward iridectomy, enlarging existing coloboma. Lens delivered with hook. Slight loss of vitreous. Patient had many previous attacks of iritis

f *Hard Cataract.*

Progress of case.	Secondary operation.	Result.
—	—	March 11th, 1905— + 11 D.S. L.V. $\frac{+ 2 \text{ cyl. ax. horiz.} = \frac{2}{15} 2 \text{ l.}}$
—	—	April 11th, 1905. + 11 D.S. R.V. $\frac{+ 2 \text{ cyl. ax. horiz.} = \frac{2}{15} \cdot}$ + 15 D.S. + 2 cyl. = J. 4.
—	—	Aug. 18th, 1905— + 11 D.S. L.V. $\frac{+ 1 \text{ cyl. ax. horiz.} = \frac{2}{3} \text{ partly.}}$
—	—	April 14th, 1905. R.V. + 7 D.S. = $\frac{2}{3}$ + 10 D.S. = J. 1.
Restless; iris prolapsed	April 14th— Iridectomy	Feb. 8th, 1906. R.V. + 12 D.S. = $\frac{2}{3}$ + 15 D.S. = J. 6.
—	July 7th — Needling	July 13th, 1905— + 12 D.S. L.V. $\frac{+ 1 \cdot 5 \text{ cyl. ax. } 70^\circ = \frac{2}{3} \cdot}$ + 15 D.S. + 1 \cdot 5 cyl. $70^\circ = \text{J. 1.}$
Wound septic, July 8th, improved, but eye slowly disorganised	Aug. 1st, 1905— Excision.	—
Small white dot in fundus near macula	Oct. 10th, 1905— Left needling	Oct. 16th, 1905. L.V. + 11 D.S. = $\frac{2}{3}$ + 14 D.S. = J. 6.
—	—	Aug. 24th, 1905— + 11 D.S. R.V. $\frac{+ 1 \cdot 5 \text{ cyl. ax. horiz.} = \frac{2}{3} \cdot}$ + 14 D.S. + 1 \cdot 5 cyl. = J. 1.
—	Jan. 16th, 1906— Right needling	Jan. 23rd, 1906. R.V. + 10 D.S. = $\frac{2}{3}$ + 13 D.S. = J. 2.
Some opaque membrane in pupil	—	Jan. 9th, 1906. + 6 D.S. R.V. $\frac{+ 2 \text{ cyl. ax. horiz.} = \frac{2}{3} \cdot}$ + 10 D.S. + 2 cyl. = J. 14.
Dense white membrane in pupil, the result of old iritis. Progress after operation quite good.	—	Dim reflex through lower part of pupil. Secondary operation necessary.

No. in vol. 1905.	Report No.	Name and date.	Sex.	Age.	Anes- thetic.	Operation.
1	12	J. K. Jan. 4th	M.	52	Cocain	Right extraction; previous iridectomy. Some soft lens matter
13	13	M. C. Mar. 8th	F.	69	"	Left extraction with iridectomy
16	14	S. P. Mar. 15th	F.	67	"	Right extraction with iridectomy
23	15	H. H. May 1st	F.	85	"	Right extraction with iridectomy
39	16	S. B. June 9th	F.	62	"	Right extraction with iridectomy
45	17	A. F. June 22nd	F.	58	"	Right extraction with iridectomy
57	18	M. B. Aug. 23rd	F.	—	"	Right preliminary iridectomy
61	19	C. C. Aug. 28th	F.	76	"	Right extraction with iridectomy
68	20	J. N. Sept. 6th	F.	77	"	Right extraction with iridectomy
72	21	S. J. Sept. 18th	F.	58	"	Right preliminary iridectomy. Patient the subject of diabetes mellitus, passing 1500 grs. of sugar per day

*f Hard Cataract.*

Progress of case.	Secondary operation.	Result.
—	—	Jan. 26th, 1905— + 10 D.S. R.V. $\frac{+2 \text{ cyl. ax. horiz.} = \frac{2}{3}}{+15 \text{ D.S.}}$ + 2 cyl. = J. 14.
March 22nd—Still hyphæma	—	March 22nd, 1905— L.V. + 12 D.S. = $\frac{2}{3}$ . + 15 D.S. = J. 2.
—	April 17th, 1905— Left extraction with iridectomy	May, 1905. R.V. $\frac{+13 \text{ D.S.}}{+2 \text{ cyl. } \backslash 30^\circ = \frac{2}{3}}$ + 16 D.S. $\frac{+2 \text{ cyl. } \backslash 30^\circ = \text{J. 10.}}{+14 \text{ D.S.}}$ L.V. $\frac{+2 \text{ cyl. } \backslash 30^\circ = \frac{2}{3}}{+17 \text{ D.S.}}$ + 2 cyl. $\backslash 80^\circ = \text{J. 8.}$
—	—	June 21st, 1905— R.V. + 11 D.S. = $\frac{2}{3}$ . + 16 D.S. = J. 16.
—	—	July 17th, 1905— R.V. + 11 D.S. = $\frac{2}{3}$ . + 13 D.S. = J. 1.
—	—	July 4th, 1905— R.V. + 10 D.S. = $\frac{2}{3}$ . + 14 D.S. = J. 2.
Some thin membrane in pupil	Dec. 11th, 1905— Iridectomy, enlarg- ing existing colo- boma, right extraction	Jan. 12th, 1906— + 10 D.S. R.V. $\frac{+2 \text{ cyl. ax. horiz.} = \frac{2}{3}}{+18 \text{ D.S.}}$ + 2 cyl. = J. 6.
Some opaque membrane in pupil	—	March 26th, 1906— R.V. + 12 D.S. = $\frac{2}{3}$ . + 16 D.S. = J. 1.
Pupil never reacted much to atropine	—	Oct. 1st, 1905— + 11 D.S. R.V. $\frac{+2 \text{ cyl. ax. horiz.} = \frac{2}{3}}$
Good and uninterrupted	—	—

*Mr. Fisher's Cases*

No. in vol 1905.	Report No.	Name and date.	Sex.	Age.	Anes- thetic.	Operation.
79	22	H. F. Sept. 22nd	M.	47	Cocain	Left simple extraction
82	23	L. D. Oct. 2nd	F.	62	„	Left extraction with iridectomy
83	24	M. S. Oct. 25th	F.	52	„	Right extraction with iridectomy
84	25	S. A. Oct. 4th	F.	59	„	Right extraction with iridectomy
86	26	M. B. Oct. 23rd	F.	75	„	Left extraction with iridectomy
94	27	E. W. Nov. 7th	F.	58	„	Left extraction with iridectomy
96	28	A. B. Nov. 22nd	F.	71	„	Right preliminary iridectomy

*Mr. Lawford's Cases*

16	29	W. B. Feb. 9th	M.	26	Cocain	Right needling for traumatic cataract. Lens very fluid
38	30	W. F. April 6th	M.	16	„	Right needling for congenital cataract, membranous remains of lens found
49	31	S. H. April 19th	F.	37	„	Left needling. Previous extraction of lamellar cataract

*f Hard Cataract.*

Progress of case.	Secondary operation.	Result.
Some soft lens matter left	—	Nov. 24th, 1905— + 11 D.S. L.V. $\frac{+1 \text{ cyl. ax. horiz.} = \frac{2}{3}}{+14 \text{ D.S.} = \text{J. 1.}} + 1 \text{ cyl.}$
Some thin membrane in pupil	—	Oct. 18th, 1905— + 8 D.S. L.V. $\frac{+1.5 \text{ cyl. ax. horiz.} = \frac{1}{12}}{+11 \text{ D.S.} = \text{J. 8.}} + 1.5 \text{ cyl.}$
Patient restless	—	Nov. 13th, 1905— + 10 D.S. R.V. $\frac{+3 \text{ cyl. ax. vert.} = \frac{1}{12} \text{ partly.}}$
—	—	March 7th, 1906— + 10 D.S. R.V. $\frac{+4.5 \text{ cyl. ax. horiz.} = \frac{2}{3}}{+13 \text{ D.S.} = \text{J. 1.}} + 4.5 \text{ cyl.}$
Some opaque capsule in pupil	—	Nov. 8th, 1905— + 12 D.S. L.V. $\frac{+2 \text{ cyl. ax. vert.} = \frac{1}{12}}$
Slight iritis, striped haze persisted long, some opaque capsule	—	March 26th, 1906— + 6 D.S. L.V. $\frac{+2 \text{ cyl. ax. horiz.} = \frac{2}{12}}{+9 \text{ D.S.} = \text{J. 8.}} + 2 \text{ cyl.}$
Nov. 23rd—Lens capsule ruptured spontaneously	Nov. 26th, 1905— Right extraction	Dec. 27th, 1905— + 11 D.S. R.V. $\frac{+2.5 \text{ cyl. ax. horiz.} = \frac{2}{12}}$

*of Soft Cataract.*

—	Feb. 10th, 1905— Right curette evacuation	—
Right central gap Left upper part of pupil clear	April 27th, 1905— Left needling May 9th, 1905— Left curette evacuation	May 19th, 1905— R.V. + 8 D.S. = $\frac{2}{3}$ . L.V. + 8 D.S. = $\frac{2}{3}$ .
—	—	April 21st, 1905— L.V. with correction = $\frac{2}{3}$ partly.

*Mr. Lawford's Cases*

No. in vol. 1905.	Report No.	Name and date.	Sex.	Age.	Anes- thetic.	Operation.
64	32	V. L. July 6th	M.	1½	A.C.E.	Right extraction for congenital cataract. Lens tough and membranous. With- drawn with iris forceps. Small loss of vitreous
77	33	G. R. Aug. 3rd	M.	14	Cocain	Left needling; capsule tough; no escape of lens matter. For traumatic cataract
90	34	M. B. Oct. 5th	F.	3	CH Cl <sub>3</sub>	Right needling

*Mr. Fisher's Cases*

91	35	A. S. Nov. 13th	M.	2	CH Cl <sub>3</sub>	Right and left needling for congenital cataracts; some posterior synechia were freed in right; three previous needlings on right; one previous needling on left
93	36	E. H. Nov. 6th	F.	12	Cocain	Right needling for congenital cataract



*of Soft Cataract.*

Progress of case.	Secondary operation.	Result.
Right pupil clear	—	—
Good gap at upper part of pupil	Aug. 15th, 1905— Left needling Aug. 25th, 1905— Left needling Oct. 10th, 1905— Left needling	Dec. 20th, 1905— Pupil almost clear.
Wound became infected after curette evacuation	Oct. 19th, 1905— Right curette evacuation	Oct. 24th, 1905— Right excision.

*of Soft Cataract.*

Both pupils left black	—	—
Very slight reaction. No definite gap	Nov. 22nd, 1905— Right needling	—



**R E P O R T**  
**OF THE**  
**DEPARTMENT FOR DISEASES OF THE SKIN**  
**1905.**

---

**BY E. STAINER, M.A., M.B., B.CH. OXON**

## Statistical

DISEASES.	Jan.		Feb.		March.	
	M.	F.	M.	F.	M.	F.
Acne rosacea . . . . .	2	2	...	...	...	4
„ vulgaris . . . . .	1	...	1	2	...	3
Alopecia . . . . .	2	1	1	2	...	...
„ areata . . . . .	3	2	4	4	4	2
Dermatitis herpetiformis . . . . .	1	...	...	...	...	...
Drug eruptions . . . . .	...	...	...	...	...	...
Dysidrosis . . . . .	...	1	1	...	3	2
Eczema . . . . .	16	13	20	14	23	16
Erysipelas . . . . .	...	...	...	...	...	...
Erythema (various) . . . . .	...	...	...	...	...	...
„ multiforme . . . . .	...	...	...	...	1	...
„ nodosum . . . . .	1	...	...	...	...	1
„ pernio . . . . .	...	...	...	...	...	1
Folliculitis . . . . .	2	...	...	...	...	...
Furunculosis . . . . .	...	1	...	...	...	...
Herpes simplex . . . . .	...	1	...	2	1	...
„ zoster . . . . .	4	2	3	1	1	2
Hyperidrosis . . . . .	...	...	...	...	...	...
Hyperkeratosis palmarum et plantarum . . . . .	1	...	...	...	...	1
Ichthyosis . . . . .	1	1	1	...	1	...
Leucoderma . . . . .	...	...	1	...	...	...
Lichenification . . . . .	...	1	...	...	...	...
Lichen pilaris . . . . .	...	...	...	...	...	...
„ planus . . . . .	...	...	...	...	...	...
„ urticatus . . . . .	...	1	...	1	3	2
Lupus erythematosus . . . . .	...	1	...	1	...	1
„ vulgaris . . . . .	1	1	...	...	...	...
Miliaria . . . . .	...	...	...	...	...	...
Molluscum contagiosum . . . . .	...	...	...	...	...	...
Morbilli . . . . .	1	...	...	...	...	1
Nævus vascularis . . . . .	...	...	...	...	...	...
Onychia . . . . .	...	...	...	...	...	...
Papilloma . . . . .	...	...	...	...	...	...
Pediculosis capitis . . . . .	...	1	...	1	...	...
„ corporis . . . . .	1	...	1	3	...	...
Pityriasis rosea . . . . .	...	1	...	1	...	...
„ rubra . . . . .	...	...	...	...	...	...
Prurigo (Hebra) . . . . .	...	...	1	...	2	...
Pruritus . . . . .	1	...	2	...	...	1
Psoriasis . . . . .	9	5	2	6	1	5
Purpura . . . . .	1	...	...	...	...	...
Pyodermia . . . . .	6	...	5	3	6	4
Rodent ulcer . . . . .	...	...	...	...	...	...
Rotheln . . . . .	...	...	...	...	...	...
Scabies . . . . .	11	5	5	5	5	5
Sclerodermia . . . . .	...	...	...	...	...	1
Seborrhœa capitis . . . . .	...	...	...	...	...	...

Table, 1905.

April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	5	1	5	1	3	2	1	1	2	1	1	...	1	...	...	...	...	32
...	...	...	1	...	...	1	1	...	1	2	1	4	1	...	2	4	1	25
...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	...	8
1	2	10	3	5	3	3	5	4	2	5	1	1	4	...	4	5	1	78
...	...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	3
1	...	...	1	...	...	...	...	...	...	...	...	...	1	...	...	...	...	3
...	...	2	1	1	1	5	2	2	2	...	...	1	...	...	...	1	...	23
13	20	26	27	28	11	12	8	24	15	15	30	19	24	8	18	18	9	428
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	1
1	...	...	1	...	...	...	...	...	1	...	1	1	2	...	...	...	...	7
1	2	...	1	...	...	...	1	1	1	2	1	2	...	1	...	...	...	14
...	...	...	...	...	...	...	1	1	2	...	...	1	...	1	...	2	...	10
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	1	...	2	...	1	1	...	...	...	...	...	...	7
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	1	...	...	2	2	1	...	...	...	...	1	...	...	...	1	...	12
1	1	1	1	1	2	1	1	1	1	1	1	...	...	6	1	...	...	32
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	1	1	...	...	...	...	...	...	1	2	...	1	...	1	...	...	9
...	1	3	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	11
1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	1	...	...	...	...	...	1	...	1	...	...	...	...	...	4
...	1	...	...	...	...	...	...	...	...	...	...	...	1	1	1	...	1	1
...	1	...	...	...	3	...	1	...	1	...	...	1	1	1	...	1	...	10
4	2	4	1	1	3	3	5	1	1	...	...	...	...	2	1	1	...	41
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	4
...	1	1	3	...	...	1	1	2	...	1	1	...	...	1	1	2	...	17
...	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	1
...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	6
1	2	2	4	...	5	1	3	2	...	3	1	1	1	3	2	...	1	34
1	1	1	3	1	1	...	...	1	...	2	...	...	2	1	...	5	1	24
...	1	1	...	...	1	1	2	1	1	...	...	...	...	...	...	...	...	9
...	...	...	...	...	...	...	...	...	...	...	...	1	...	...	...	1	...	2
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	3
...	1	...	...	...	...	...	...	1	...	1	1	...	...	...	1	...	...	9
...	6	6	5	9	5	2	7	3	4	10	8	5	6	3	7	4	...	118
...	...	...	...	...	...	...	...	1	...	1	3	...	...	...	...	...	...	6
6	2	5	3	6	3	7	6	3	8	7	3	4	8	2	1	7	3	109
...	...	...	...	...	...	...	...	...	...	1	...	...	...	...	...	2	...	3
...	...	...	...	1	2	...	1	...	...	...	...	...	1	...	1	...	...	6
3	5	4	6	9	...	5	2	4	4	10	1	6	2	2	3	12	4	128
...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1
...	...	...	...	...	1	1	1	...	...	1	...	...	...	...	...	...	...	4

## Statistical Table,

DISEASES.	Jan.		Feb.		March.	
	M.	F.	M.	F.	M.	F.
Seborrhœa corporis (Dühring) . . . . .	...	1	...	1	...	...
Syphilis (congenital) . . . . .	...	...	...	...	...	...
" (primary) . . . . .	...	...	...	...	1	1
" (secondary) . . . . .	1	3	1	1	2	3
" (tertiary) . . . . .	1	...	1	...	1	1
Tinea circinata . . . . .	6	4	2	...	3	2
" tonsurans . . . . .	6	8	12	4	10	4
" versicolor . . . . .	...	...	...	...	1	...
Tuberculosis cutis . . . . .	...	...	...	...	...	...
Urticaria . . . . .	1	1	3	1	4	1
Varicella . . . . .	...	...	1	2	...	...
Varicose ulcer . . . . .	...	...	...	...	...	...
Miscellaneous . . . . .	1	1	...	1	1	2

1905—continued.

April.		May.		June.		July.		Aug.		Sept.		Oct.		Nov.		Dec.		Total.
M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
...	...	...	...	...	...	3	2	...	...	...	...	1	1	1	...	...	1	11
...	...	...	...	...	...	...	...	1	...	...	...	1	...	...	1	...	...	3
...	...	...	...	...	...	1	...	...	...	...	...	...	...	1	...	...	...	4
1	1	3	3	2	1	2	3	2	4	1	2	2	1	4	1	1	2	47
...	...	5	1	4	2	1	1	3	1	...	...	1	1	4	...	2	2	32
1	1	...	...	4	3	4	2	1	...	2	...	3	2	4	1	1	...	46
5	6	8	7	9	5	5	9	8	7	6	7	3	7	11	8	9	2	166
...	...	1	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	3
...	...	...	...	...	...	...	...	2	...	...	...	...	...	...	...	...	...	2
4	2	2	2	5	3	...	...	1	2	...	2	1	1	1	...	2	...	39
1	1	1	...	1	...	...	...	...	...	...	...	...	...	...	...	1	...	8
...	...	...	...	1	...	...	...	...	...	...	...	...	...	...	...	...	...	1
1	...	3	3	...	...	1	2	2	1	...	1	...	...	...	5	...	...	25
1669																		





# REPORT

## OF THE

### THROAT DEPARTMENT OF ST. THOMAS'S HOSPITAL FOR 1905.

By H. BETHAM ROBINSON, M.S.LOND.,  
SURGEON IN CHARGE OF THE DEPARTMENT.

THE following Report has been compiled on the same lines as in the last few years.

*Total Number of New Cases treated during the Year 1905.*

	Number of patients.		
	Male.	Female.	Total.
A. Affections of the mouth, fauces, and tonsils .	82	78	160
B. Affections of the nose and accessory cavities .	76	100	176
C. Affections of the naso-pharynx, pharynx, and oesophagus . . . . .	201	161	362
D. Affections of the larynx . . . . .	34	28	62
E. General and miscellaneous . . . . .	5	9	14
Totals . . . . .	398	376	774

## A. Affections of the Mouth, Fauces, and Tonsils.

Disease.	Number of patients.		
	Male.	Female.	Total.
Hare-lip . . . . .	1	0	1
Stomatitis . . . . .	0	1	1
Mucous patches on tonsils, etc. . . . .	3	4	7
Acute and subacute tonsillitis . . . . .	12	9	21
Tonsillar and peritonsillar abscess . . . . .	4	4	8
Chronic follicular tonsillitis . . . . .	6	4	10
Hypertrophy of tonsils . . . . .	43	50	93
Congenital perforation of right faucial pillar . . . . .	1	0	1
Tuberculosis of fauces . . . . .	0	1	1
Syphilis (gumma, necrosis, etc.) of soft palate, tonsil, etc. . . . .	6	1	7
Adherent soft palate . . . . .	0	1	1
Gumma of tongue . . . . .	2	0	2
Enlarged lingual tonsil . . . . .	0	2	2
Bifid uvula . . . . .	0	1	1
Acute uvulitis . . . . .	1	0	1
Hypertrophy of uvula . . . . .	2	0	2
Polypus of uvula . . . . .	1	0	1
Totals . . . . .	82	78	160

## B. Affections of the Nose and Accessory Cavities.

Disease.	Number of patients.		
	Male.	Female.	Total.
Acute and subacute rhinitis . . . . .	3	4	7
Chronic nasal catarrh . . . . .	1	4	5
Hypertrophic rhinitis . . . . .	17	22	39
Hypertrophy of middle turbinate . . . . .	3	2	5
"    of inferior turbinate . . . . .	2	1	3
Atrophic rhinitis and ozæna . . . . .	3	11	14
Deflected septum and spurs . . . . .	16	14	30
Simple ulcer of septum . . . . .	2	1	3
Tuberculosis of septum . . . . .	1	0	1
Perforation of septum . . . . .	3	1	4
Syphilis (necrosis, etc.) of nasal cavities . . . . .	3	10	13
Lupus . . . . .	0	1	1
Carcinoma . . . . .	0	1	1
Nasal polypi . . . . .	15	26	41
Epistaxis . . . . .	3	0	3
Empyema of maxillary antrum . . . . .	2	2	4
"    of frontal sinus . . . . .	2	0	2
Totals . . . . .	76	100	176

*c. Affections of the Naso-pharynx, Pharynx, and Œsophagus.*

Disease.	Number of patients.		
	Male.	Female.	Total.
Acute naso-pharyngitis . . . . .	5	2	7
Chronic naso-pharyngitis . . . . .	3	1	4
Acute and subacute pharyngitis . . . . .	4	6	10
Chronic and granular pharyngitis . . . . .	33	38	71
Adenoid vegetations . . . . .	53	33	86
Adenoid vegetations and enlarged tonsils . . . . .	89	76	165
Syphilis (gumma, etc.) of pharynx . . . . .	8	2	10
Sarcoma of naso-pharynx . . . . .	1	0	1
Carcinoma of pharynx . . . . .	4	0	4
Foreign body in pharynx . . . . .	0	2	2
Functional dysphagia . . . . .	0	1	1
Carcinoma of œsophagus . . . . .	1	0	1
Totals . . . . .	201	161	362

*d. Affections of the Larynx.*

Disease.	Number of patients.		
	Male.	Female.	Total.
Acute and subacute laryngitis . . . . .	6	5	11
Chronic laryngitis . . . . .	6	4	10
Laryngeal tuberculosis . . . . .	11	9	20
Syphilis of the larynx . . . . .	5	2	7
Syphilitic cicatricial web . . . . .	0	1	1
Chorditis tuberosa . . . . .	1	0	1
Pachydermia laryngis . . . . .	0	1	1
Laryngeal polypus . . . . .	0	1	1
Papilloma of the larynx . . . . .	1	1	2
Carcinoma of the larynx . . . . .	2	0	2
Functional aphonia . . . . .	0	3	3
Left abductor paralysis . . . . .	2	0	2
Total recurrent paralysis, right side . . . . .	0	1	1
Totals . . . . .	34	28	62

*E. General and Miscellaneous Affections.*

Disease.	Number of patients.		
	Male.	Female.	Total.
Diseases of thyroid gland . . . . .	0	4	4
Enlarged cervical glands . . . . .	0	2	2
Medical and trivial . . . . .	5	3	8
Totals . . . . .	5	9	14

*The following Operations were performed in the Out-patients' Theatre under a General Anæsthetic.*

Operation.	Number of patients.		
	Male.	Female.	Total.
Removal of adenoids . . . . .	44	26	70
Removal of tonsils . . . . .	38	40	78
Removal of adenoids and tonsils . . . . .	73	68	141
Removal of turbinates . . . . .	3	1	4
Removal of nasal polypi . . . . .	1	10	11
Removal of laryngeal polyp . . . . .	0	1	1
Cauterisation of pharynx . . . . .	0	1	1
Totals . . . . .	159	147	306

Almost without exception ethyl chloride has been the anæsthetic used.

# REPORT

OF THE

## EAR DEPARTMENT OF ST. THOMAS'S HOSPITAL

FOR THE YEAR 1905.

---

By H. J. MARRIAGE, M.B., B.S.LOND., F.R.C.S.ENG.,  
AURAL SURGEON IN CHARGE OF OUT-PATIENTS.

---

*New Cases treated during the Year 1905.*

Disease.	Males.	Females.	Total.
Diseases of the external ear . . . . .	105	53	158
"    "    middle ear . . . . .	513	528	1041
"    "    internal ear . . . . .	40	14	54
"    "    nose, mouth and pharynx . . . . .	16	38	54
Miscellaneous . . . . .	7	10	17
<b>Total . . . . .</b>	<b>681</b>	<b>643</b>	<b>1324</b>

Disease.	Males.	Females.	Total.
<b>A. DISEASES OF THE EXTERNAL EAR.</b>			
Eczema of auricle . . . . .	—	1	1
Abscess of auricle . . . . .	2	—	2
Perichondritis of auricle . . . . .	—	1	1
Contraction of auricle after burn . . . . .	1	—	1
Malformation of auricle with absence of meatus . . . . .	—	1	1
Congenital atresia of external meatus . . . . .	1	—	1
Acute otitis externa . . . . .	20	13	33
Furuncle of meatus . . . . .	5	3	8
Impetigo of meatus . . . . .	2	—	2
Eczema of meatus . . . . .	—	2	2
Foreign body in meatus . . . . .	1	1	2
Cerumen . . . . .	73	31	104
Total . . . . .	105	53	158
<b>B. DISEASES OF THE MIDDLE EAR.</b>			
Otitis media:			
Acute suppurative . . . . .	64	44	108
Chronic " . . . . .	215	240	455
" " with polypus . . . . .	36	26	62
Acute non-suppurative . . . . .	9	21	30
Chronic " . . . . .	78	95	173
Acute mastoid disease following acute otitis media suppurativa . . . . .	2	—	2
Acute mastoid disease following chronic otitis media suppurativa . . . . .	1	2	3
Caries of mastoid . . . . .	6	7	13
Sclerosis following chronic otitis media suppurativa . . . . .	7	9	16
Traumatic perforation of membrane . . . . .	1	—	1
Eustachian obstruction:			
Adenoids . . . . .	80	70	150
Other causes . . . . .	14	14	28
Total . . . . .	513	528	1041
<b>C. DISEASES OF THE INTERNAL EAR.</b>			
Ménière's symptoms . . . . .	3	—	3
Nerve-deafness . . . . .	33	10	43
Deaf-mutism . . . . .	2	2	4
Congenital syphilis . . . . .	—	1	1
Acquired syphilis . . . . .	2	1	3
Total . . . . .	40	14	54

Disease.	Males.	Females.	Total.
<b>D. DISEASES OF THE NOSE, MOUTH AND PHARYNX.</b>			
Hypertrophic rhinitis . . . . .	3	7	10
Atrophic rhinitis . . . . .	—	6	6
Deflected septum nasi . . . . .	2	1	3
Nasal polypi . . . . .	2	6	8
Cellulitis of nose . . . . .	—	1	1
Epistaxis . . . . .	—	1	1
Aphonia . . . . .	—	1	1
Dental caries . . . . .	—	3	3
Acute tonsillitis . . . . .	3	6	9
Follicular tonsillitis . . . . .	5	1	6
Tonsillar abscess . . . . .	—	1	1
Chronic pharyngitis . . . . .	1	4	5
Total . . . . .	16	38	54
<b>E. MISCELLANEOUS DISEASES.</b>			
Inflamed gland over mastoid . . . . .	1	2	3
Glands of neck . . . . .	—	1	1
Anæmia . . . . .	—	2	2
Mumps . . . . .	2	—	2
Marasmus . . . . .	1	—	1
Hysterical deafness . . . . .	—	1	1
Neuralgia . . . . .	1	—	1
Medical . . . . .	—	1	1
Nihilitis . . . . .	2	3	5
Total . . . . .	7	10	17

*Operations performed in the Out-patients' Theatre.*

Operation.	Males.	Females.	Total.
Removal of adenoids . . . . .	30	29	59
Removal of tonsils . . . . .	3	6	9
Removal of tonsils and adenoids . . . . .	74	80	154
Removal of aural polypi . . . . .	7	10	17
Removal of nasal polypi . . . . .	—	6	6
Removal of turbinates . . . . .	—	1	1
Total . . . . .	114	132	246





REPORT FOR 1905

FROM THE

CLINICAL LABORATORY, ST. THOMAS'S  
HOSPITAL.

---

By LEONARD S. DUDGEON, M.R.C.P.LOND.

DIRECTOR OF THE LABORATORY.

---

THE total number of specimens examined in the Laboratory during the year was 1544.

*Tumours, etc.*—446 specimens were received from the operating theatres and the out-patients' and special departments.

Of these—

182 were carcinomata.

28 were sarcomata.

3 were rodent ulcers.

The remainder (283) consisted of non-malignant tumours, fragments of granulation tissue, enlarged glands, etc.

*Serum reaction for typhoid fever.*—The Widal-Grünbaum test was done 89 times. In 20 instances the reaction was positive, in 68 negative, and in 1 doubtful.

*Diphtheria.*—Throat cultivations were examined for diphtheria bacilli 203 times. Bacilli having the characteristics of the Klebs-Löffler bacillus were found on 51 occasions. In the remainder (152) the results were negative.

156 cultures were made from urine, blood, pus, etc.

*Blood.*—228 examinations of blood were made in all. These included red-cell, white-cell, and differential counts, estimations of hæmoglobin, and examinations for malarial organisms.

*Sputum.*—Sputa were examined 56 times for tubercle bacilli; a positive result was obtained on 14 occasions. Forty cases came from the medical and 16 from the surgical side.

*Urines.*—The examinations of urines, which numbered 107 in all, were for casts, presence of typhoid and tubercle bacilli, etc. Of 44 specimens examined for tubercle bacilli these organisms were found 12 times.

Cambridge's pancreatic reaction was done on 12 occasions, and was positive 5 times.

Other investigations (236) included examination of inflammatory exudate for cyto-diagnosis, vomits, pus, calculi, etc., while the water, sponges, and dressings used in the operating theatres were frequently tested for the presence of micro-organisms.

# REPORT

## OF THE

### X RAY DEPARTMENT, 1905.

BY A. H. GREG, M.A., M.B., B.C.CANTAB.  
SUPERINTENDENT.

#### *X Ray Examinations.*

DURING the year there have been 2521 examinations made on 1780 patients. The following table shows the purpose for which the examinations were made.

For foreign bodies	.	.	.	.	213
" injuries of bones and joints	.	.	.	.	849
" diseases of bones	.	.	.	.	198
" " joints	.	.	.	.	183
Of the chest	.	.	.	.	87
" abdomen	.	.	.	.	139
For deformities	.	.	.	.	70
Miscellaneous	.	.	.	.	41
Total	.	.	.	.	1780

#### *Treatment.*

There have been 177 patients under treatment in the department during the year.

In the case of examinations there has been a great increase in the work, which is now about double the work done three years ago. In the case of treatment there has been a slight increase only, the work having reached the capacity of the department.



# REPORT

## OF THE

### PHYSICAL EXERCISE DEPARTMENT

#### FOR 1905.

---

BY EDRED M. CORNER, M.B.CANTAB., F.R.C.S.

SURGEON IN CHARGE OF THE DEPARTMENT.

---

In the last volume of the 'Reports,' the first report of the year's work of the department was published. The work done in 1905 exceeded that done in 1904 by more than half as many cases again, demonstrating that in spite of its many disadvantages the department was prospering. The following list shows the cases treated :

Spinal curvature . . . . .	64 cases.
Antero-posterior curvature:	
Kyphosis . . . . .	4 cases.
Lordosis . . . . .	2 cases.
Kypho-lordosis . . . . .	1 case.
	— 7 „
Lateral curvature:	
Scoliosis—	
Dorsal curve to the right . . . . .	32 cases.
„ „ left . . . . .	9 „
Kypho-scoliosis . . . . .	8 „
Lordo-scoliosis . . . . .	2 „
Alternating curvatures . . . . .	6 „
	— 57 „

446 *Report of Physical Exercise Department for 1905.*

Flat feet . . . . .	7 cases.
Genu valgum . . . . .	1 case.
Congenital dislocation of the hips . . . . .	1 „
Unequal legs . . . . .	2 cases.
Torticollis . . . . .	3 „
Neurasthenia . . . . .	2 „
Tonsils and adenoids . . . . .	1 case.
Pulmonary collapse . . . . .	1 „
Erb's paralysis . . . . .	1 „
Stiff joints (osteo-arthritis) . . . . .	1 „
General feeble development . . . . .	3 cases.
Total . . . . .	87 cases.

Spinal curvatures, as they always will, form the predominant part of the work in the department. As, however, they are also the very cases for which the least can be done in the time at our disposal, the relative proportion of them indicates, in some way, the amount of really beneficial work done in the year. In 1903 these cases formed about 69 per cent. of those attending the department. In 1904 the percentage rose to 73, showing that the increased activity in 1904 was not in the direction in which it should have been. The percentage should be reduced when the department is getting the material to which it can do most good. This was not our good fortune in 1904. The fact that only one "lung" case and only one "tonsils and adenoids" case attended also emphasises that the proper material was not forthcoming. Still, it is an improvement on 1904.

Several cases of particular interest were seen, short accounts of which are given.

CASE 1. *Case of congenital dislocation of the hips.*—This case was sent up on account of the pain from which the woman suffered. The patient was a fully-developed woman, æt. 28. The heads of the femora were dislocated upwards and a little backwards, lying behind the anterior inferior spines of the ilia. In consequence, the feet were directed forwards in the natural position. The trochanters were almost on a level with crests of the ilia. She walked with a waddling gait. Previous to the last six months she had been hard at work in a dairy, and though she used to get

tired was better than ever she had been in her life. As her friends thought the work too hard, she was persuaded to give it up and go into service with much lighter work. Soon after this change, when her muscles became less active, she began to discover that she was unable to do things which she had been accustomed to do. Shortly, as her muscles became less and less used, she began to suffer pains in her back and hips. For this she sought relief. It was perfectly obvious why she suffered. Massage and exercises soon relieved her. The case is of particular interest in showing what useful lives people with dislocated hips can lead, and also how very important it is to keep them muscularly in good condition.

2. *Case of neurasthenic spinal deformity.*—M. G—, a girl, æt. 17, used to do a lot of scrubbing or ironing with her right hand. Becoming neurasthenic, she developed an extraordinary deformity, in which her trunk was deviated to the right. The pelvis was tilted, the right anterior superior spine being depressed and the left raised. It was a pure *ponation*, there being no obvious rotation or deformity of the vertebræ. The segments of the spine were quite movable. The deformity came on suddenly after an accident. For five weeks she had massage and exercises daily, during which time she improved enormously. Unfortunately, she left the hospital to return to her work and former associations, with the result that she relapsed, becoming as bad as ever.

3. *Three cases of torticollis after operation.*—These three cases were all in young boys, and all had been operated on, and all were disappointed in not being cured. The tight sterno-mastoid had been divided in all cases. They, therefore, teach an important lesson—namely, that operation for this condition must be followed by a course of movements, to be commenced shortly after the wound has healed. It may be necessary to practise movements for some months. Indeed, it would seem that we might generalise from the three cases, and assert that every operation for a deformity should be followed by massage and exercises until the functional activity of the part is restored.

In a paper in 'The Archives of the Röntgen Ray and Physical Exercise,' July, 1906, the subject of the special treatment of cases of irreducible lateral curvature in growing subjects was considered. The material upon which it was based and with which it was illustrated was derived from the Exercise Department of St. Thomas's Hospital. Reference has been made to this communication in this report because it is part of the work of the department, and deals with what is almost the only branch of physical therapeutics in which special knowledge and intelligence is required.



## RECENT ADDITIONS TO THE MUSEUM.

---

By S. G. SHATTOCK, F.R.C.S.,

CURATOR OF THE MUSEUM.

---

- 2A.** The end of an iron railing which was successfully removed from the thigh.

From a man *æt.* 29, who fell a distance of twenty feet, the spike of the railing shown penetrating the left thigh in Scarpa's triangle, and then breaking off level with the skin. The femur was uninjured, the foreign body passing to the inner side of that bone and the superficial femoral vessels; the limb was cold and bloodless owing to the compression of the vascular trunks. The spike was removed and the wound closed, a counter opening being made at the back of the thigh for better drainage. Much suppuration, however, occurred. Five days later the femoral artery was ligatured in two places on account of secondary hæmorrhage, an intervening, unsupported length of three inches being then excised; the femoral vein was likewise ligatured as it was so softened as to give way; the internal saphenous vein was divided in removing the sloughing skin.

The wound continued to suppurate, but eventually did well, the temperature becoming normal on the forty-first day. A useful limb resulted.

(C. S. Wallace, 'Clinical Soc. Trans.,' vol. *xxix*, p. 226.)

Presented by C. S. Wallace, Esq.

- 38A.** A spheroidal mass of dense fibrous tissue about two inches in diameter, with the subjacent skin, which was removed from the buttock, and was possibly formed in connection with the bursa over the ischial tuberosity. No indication of a cavity, however, appears in the divided surface.

From a man, a copper-smith, 38 years of age. He was accustomed to stand at his work, and sat down only for meals. There was no history of syphilis. The disease commenced with pain, a swelling appearing later.

When admitted, there was on the left side a solid nodular mass adherent to the skin, but fairly moveable on the deeper structures. On the right side there was a similar but smaller tumour. At the operation each was found to be adherent to the *gluteus maximus*.

The patient was admitted under the care of Mr. C. S. Wallace, April, 1903.

- 98C.** Portion of the shaft of a tibia, showing a comminuted, but incomplete, fracture due to gun-shot. On the inner, subcutaneous aspect the wall of the shaft presents a cleanly cut semi-circular aperture, from which a fissure leads for some distance downwards, whilst above this a fragment which has been detached, is in process of reunion; some of the fragments of the posterior wall are wanting. It will be noticed that the comminution is much more extensive in the outer wall of the bone, *i. e.* in the portion of the wall traversed last by the bullet. The various fragments and adjoining portions of the shaft are thinly covered with newly formed osseous tissue.

From the South African war.

Presented by Gerald L. Hanwell, Esq.

- 260B.** A vertical section of the lower part of a forearm with the adjoining portion of the hand. The radius has been fractured somewhat obliquely from before, upwards and backwards, through the lower articular end. The lower fragment with the hand has undergone the usual displacement backwards. The fracture does not involve the wrist-joint.

- 282A.** A vertical section of the upper end of a femur excised for coxa vara. The head of the bone has undergone a marked degree of displacement downwards, the upper, highest, point of its articular surface lying an inch and a half below the summit of the great trochanter, in the vertical position of the shaft. On the lower aspect the circumferential portion of the displaced head is separated by a narrow interval only from the inner surface of the shaft, in which interval the lower portion of the articular capsule doubtless lay. A close inspection of the divided surface indicates the repair of a fracture between

the neck and the head, close behind the latter, the repair being partly by bone and partly (as told by the minute examination of the other half of the specimen) by fibrous tissue.

The portion of femur preserved was excised from a woman (Margaret S—) æt. 26, in whom the hip-joint was very painful and rigid. The patient was a strong-looking woman, who walked with some wobbling. Her spine and pelvis exhibited marked lordosis. She began to walk at the age of two years, and even then a wobbling gait was noticed. When eleven years old she was thought to have hip-disease, and for eleven months she wore a Thomas's hip-splint on the left limb. She still complained of pain, which was getting worse. Both her hips were prominent, especially the left. The right trochanter was two inches above Nélaton's line; the left two and a half. The length of the limbs as measured from the umbilicus was equal. The measurement from the anterior superior iliac spine to the heel showed the right limb to be half an inch longer than the left. The flexion angle on either side was sixty degrees. Neither limb could be flexed on the abdomen beyond a right angle. Adduction of either limb was very limited. The tip of the internal condyle could be abducted from the middle line two and a half inches; the left two inches.

Adduction was more free. The limbs could be adducted so that the under surface of either knee could be made to rest on the opposite patella. This was the position most comfortable to the patient, who was accustomed to rest first one limb on the top and then the other.

(*'An Atlas of Illustrations,' fasciculus xvi, pl. i. The New Sydenham Society, 1903.*)

Presented by Robert Jones, Esq.

**366E.** A longitudinal section of the tibia of a girl, fourteen years of age. The shaft is straight, but slender, each articular end being relatively abnormally large. The divided surface of the upper end presents the abnormally thick semi-transparent zone of proliferating cartilage characterising rickets, and into the lower side of this the bone of the diaphysis is extending with abnormal irregularity. The upper highly vascular end of the shaft has been recently fractured a short distance below the epiphysial line. The lower end of the bone presents similar but less pronounced changes, but no fracture has taken place.

L. C—, æt. 14, admitted under the care of Dr. Hector Mackenzie, February, 1903. When six years of age the patient suffered from rheumatic fever, and from a second attack fifteen months later, since when she has suffered from pains in the joints, bronchitis, and short-

ness of breath. Bleeding from the gums was noticed for two months before admission. Her diet had always been a good mixed one until recently, when she had been fed only on liquids. On admission, the child presented a marked rickety character; the ends of the ribs were enlarged, the head square.

The liver was enlarged. The gums were spongy and necrotic; there were no subcutaneous hæmorrhages.

Death took place from pneumonia. After death a large deep-seated bruise was found over the great trochanter. On each side there was a separation of the lower femoral and upper tibial epiphysis.

**368F.** A vertical section of the femur of an infant, showing the results of what was probably an extensive subperiosteal hæmorrhage due to scurvy. The blood at present filling the space between the bone and the detached periosteum was effused as the result of an incision, the contents of the cavity when opened being clear, brown, and viscid. In connection with the periosteum, which forms the outer wall of the cavity, a thin shell of new bone has been produced, and, as told by microscopic section, a notable amount of cartilage.

From a child *æt.* 8 months, admitted into the East London Children's Hospital August 5th, 1904, and who died September 9th. The infant was breast-fed for a week only, then with barley-water and Nestlé's milk for five months, and lastly, for three months, with "Allenburys'" No. 3 food.

There was one other child in the family with marked rickets, who was fed in the same manner.

For a month previously to admission the child's right leg had been tender to touch, and for six days swollen and red. When admitted into the East London Hospital for Children the right thigh was found to be slightly swollen, shining, and red.

The right knee and the lower end of the femur were felt to be thickened. The gums were not spongy, and there were no abnormal signs in any of the other limbs. Temp. 100° F.; pulse 120; respiration 40. The patient was put on lemon juice, and milk and water thickened with potato.

August 8th.—The lower epiphysis of the right femur was noticed to have separated from the shaft.

Diarrhœa set in, with high temperature, and was treated with castor oil and opium, and lavage of the bowel, the lemon juice being intermitted for some days, and albumen water substituted for milk.

August 13th.—The diarrhœa ceased, and the child was again put on lemon juice. From this date until death no rise of temperature took place.

August 19th.—A needle was inserted into the swelling and some blood withdrawn, which proved normal in all respects.

August 29th.—The swelling in the thigh was found to have extended upwards on the femur; the whole thigh looked blue and congested. A splint which had been applied was removed, and the epiphysis was found reunited to the femur. As egg-shell crackling was felt over the swelling, the latter was cut down upon by Mr. C. S. Wallace. A bony surface was exposed which on being divided was found to be an osseous shell about an eighth of an inch in thickness, enclosing a cavity filled with a clear, brown, viscid fluid. The shaft of the femur, bare of periosteum, was felt running through the middle of the space. The fluid proved sterile on culture.

The child's general condition became steadily worse, and she died on September 9th. Diarrhoea and vomiting recurred during the last days of life.

Presented by C. S. Wallace, Esq.

- 377E.** The bones of the fore-limb (including the scapula) of a cretinous calf, of the Dexter Kerry breed. They are exceedingly dwarfed in length from a failure of growth at the epiphysal lines, the shaft of the humerus being represented by a flattened misshapen element, not more than a third of an inch in length; below this may be recognised the radius and ulna and more distal bones of the limb.

(C. G. Seligmann, 'Trans. Path. Soc.,' vol. lv.)

Presented by Dr. C. G. Seligmann.

- 377F.** The right hind limb of a Dachshund puppy, which died of distemper, showing the extreme, cretinoid shortness of the shafts of the femur and of the tibia and fibula. The bones are quite normal in consistence.

Presented by S. G. Shattock, Esq., and Dr. C. G. Seligmann.

- 515B.** A vertical section of the lower end of a femur, in the shaft of which is shown a somewhat irregular cavity about three inches in length from which sequestra had been at different times removed. The cavity, which is lined with a layer of granulation-tissue, opens on the inner side of the bone. The shaft around the cavity is considerably thickened from chronic inflammation.

The limb was removed by amputation from a man, 50 years of age, who was admitted under the care of Mr. Pitts, June, 1902. Eighteen years previously the patient had been kicked by a horse over the right femur. Suppuration followed in the course of a few days, and an abscess was incised. For two years discharge continued, after which a sequestrum four inches in length was removed. The wound healed,

but a subsequent blow on the same spot led to recurrence of the discharge, which persisted till the date of admission. Sequestrotomy was performed in June, 1902. The patient was readmitted in January, 1903; the wound had never closed; the urine contained a large quantity of albumen. Amputation through the middle of the thigh was carried out the same month. In February an abscess was incised on the posterior aspect of the stump. The patient left in March, convalescent.

**521A.** Portion of the right scapula of a boy, which separated after acute necrosis.

From a boy admitted under the care of Mr. Abbott, 1902. Three weeks previously he had bruised his leg; a week later the right arm became stiff and the shoulder painful. Swelling was noticed in the subscapular region three days before admission. An abscess in the infra-spinous fossa was incised, and the bone was found bare; temp. 102° F. The patient was discharged six weeks later, with a persisting sinus.

A month afterwards he was readmitted, when the sequestrum shown was removed.

**546A.** A vertical section of the upper end of a tibia from a young adult. In the diaphysis immediately below the epiphysal line there is a central sequestrum of cancellous tissue. The sequestrum is filled with a pale yellow, probably tuberculous material, and is surrounded by a zone of granulation-tissue.

**572A.** The entire lower jaw of a child, wanting the left condyle, which was removed after necrosis. The surface of the bone is for the most part smooth and unaltered, elsewhere eroded.

The sequestrum was removed from a boy *æt.* 5 years. The acute disease which led to the necrosis had occurred nearly four months previously; it was not due to any specific fever, nor to phosphorus.

The jaw was removed in two halves, sub-periosteally, the only portion left being the left condyle with part of its neck.

In four months' time from the operation a complete ring of new bone had been produced, including a new condyle on the right side. The movements were perfect and the shape good.

(F. C. Abbott, 'Reports of the Society for the Study of Disease in Children,' vol. i, p. 68.)

**599A.** The terminal phalanx of a great toe. Growing by a broad base from the plantar aspect there is a lobulated osteoma, the surface of which is covered with cartilage. The tumour

involves the border of the bone, and appears to extend beneath the nail on the dorsum, though to a less degree than on the plantar surface.

The part was removed from a man *st.* 42. The tumour had been observed four years.

Osteomata were present on certain other of the bones.

Presented by C. S. Wallace, Esq.

**611A.** A considerable portion of the alveolar border of the left upper jaw of a woman 34 years of age. The bone is much thickened and throughout of finely cancellous texture; in the surface of the removal are recognisable the fangs of the second molar tooth. The first molar is the seat of caries, as are also the third molar and first bicuspid.

From a woman admitted under the care of Mr. W. H. Battle, December, 1901. Enlargement of the jaw had been noticed fifteen months. At first there was no pain, but eight months later the patient noticed numbness of the cheek on the same side. Examination showed that the antrum was not involved. The parts were removed in January, 1902.

**660D.** The upper half of a right radius, the lower portion of the bone having been removed for a giant-celled sarcoma. To replace the lost portion an aluminium substitute has been used, the shaft of the proper bone being forced into the upper open end of the cast.

From a man *st.* 49, admitted under Mr. Robinson, April, 1904. Five years previously he sprained his right wrist, but no bone was broken. Three years later a swelling at the lower end of the right radius was perceptible; this gradually increased, without pain, the hand becoming displaced outwards. On admission, egg-shell crackling was obtained on firm pressure. A skiagram showed a central tumour of the lower end of the radius.

April 28th.—An incision made over the radial border of the tumour, and the lower three inches of the bone (with the tumour) removed, an aluminium substitute being placed in position. The wound was partially closed.

The following day the patient complained of severe pain, and the temperature rose to 101° that evening. The wound suppurated, and free drainage was allowed for by the removal of stitches, the arm being placed, moreover, in a boracic bath. The temperature remained high, and on the fifth day after the operation it had risen to 105°.

Incisions were made for the relief of the spreading cellulitis, but the patient became comatose, and died five days after the operation. At the autopsy there were found suppurative pericarditis, bronchitis, cloudy swelling of the abdominal viscera, a diffuent spleen, but no secondary tumours.

- 661A.** The lower end of a femur, the outer side of which has been "expanded" by the growth of a giant-celled sarcoma. The new bone constituting the shell of the tumour is thicker than usual, and has a nodulated character due to the inflammatory process set up by an operation, which was carried out for the enucleation of the growth some time before amputation was performed.

From a man *æt.* 26, admitted under the care of Mr. C. S. Wallace, November, 1903. He had met with an injury to the knee five months previously; a swelling was noticed a month later.

When admitted the tumour pulsated. Enucleation was carried out, the growth proving to be a giant-celled sarcoma. Much discharge from the wound followed; and an examination of the granulation-tissue from the interior of the cavity showed the presence of similar sarcomatous tissue. Amputation was therefore performed through the middle of the thigh.

- 661B.** A vertical section of portion of a femur in the lower end of which, chiefly in the inner condyle, there has grown a giant-celled sarcoma. The tumour, which has completely destroyed the inner condyle, forms a prominent swelling on the inner aspect of the femur, covered with a thin shell of new bone. The growth is of a pale pink colour blotched with orange from previous hæmorrhage. Histologically it presents the typical structure of a giant-celled sarcoma.

From a woman *æt.* 27, admitted under the care of Mr. Pitts, May, 1905, with a history of pain in the left knee of five months' duration, and of swelling of three. For two months the knee had been flexed, and the joint was occasionally swollen.

On examination a firm rounded swelling was found over the internal condyle of the left femur, with marked pulsation; no egg-shell crackling was obtained. There was dilatation of veins, and slight duskiness of skin over the tumour. The tibia was displaced backwards and outwards; the movements of the joint were very limited.

Amputation was carried out successfully through the lower third of the thigh.



- 713A.** The right knee-joint of an adult, in which the patella has been rotated on its long axis for a quarter of an inch so that what is normally the outer edge looks almost directly forwards, the opposite edge resting upon the trochlear surface.

From a man *æt.* 38, who met with an accident whilst shunting, and got his leg under the wheel of a truck. The patient at the same time sustained a compound fracture of the tibia and fibula, with much damage to the skin, necessitating amputation above the knee.

Presented by F. L. R. Greaves, Esq.

- 772A.** The left knee-joint of a man sixty-three years of age. The synovial membrane is somewhat thickened and in places covered with a thin layer of lymph. In some situations about the upper part of the specimen the synovial membrane has been raised from the subjacent fibrous tissue. The articular surfaces are everywhere covered with a thin layer of granulation tissue. On one condyle there may be recognised the bare surface of a small sequestrum. At the back of the preparation there is shown in the divided surface of the head of tibia a caseous tubercular focus about half an inch in diameter.

From a man *æt.* 63, admitted under the care of Mr. Ballance, September, 1904. The family history was negative. At the age of thirty he contracted gonorrhoea, followed by stricture. Three years before admission he suffered from pleurisy, five pints of fluid being withdrawn from the chest; there was no cough.

Four months ago the knee became so painful on walking that the patient was compelled to lie up. The joint gradually increased in size, and on three occasions fluid was removed from it. The pain was worse at night, with the character of "starting."

There were no physical signs of pulmonary disease. Recovery after amputation was uneventful.

- 916A.** The lower portion of an œsophagus, connected with which is an oval cyst about two and three quarters of an inch in its longer, vertical axis. The cyst has a smooth interior, and had no communication with the œsophagus, though intimately connected with it. It held a glairy fluid. Microscopically, its wall shows a double layer of unstriped muscular tissue, with mucosa and appertaining muscularis. In the submucosa there were a few well-developed glands.

L. B—, *æt.* 46, admitted under the care of Dr. Acland, September,

1902. The patient, who had been a healthy man, in the police force, died of acute pneumonia.

**943C.** The stomach, with part of the duodenum, of an infant who was the subject of hypertrophic stenosis of the pylorus. The narrowed condition of the pyloric canal was treated by pyloroplasty; a longitudinal incision was made in the free border, and the edges stitched together, after the incision was forcibly made, to take the transverse direction.

From a male infant, *et.* 2 months, admitted under Mr. Makins, April, 1904. The child at the time of birth weighed  $7\frac{1}{4}$  pounds, and appeared to be quite healthy until ten days before admission. It was fed solely upon barley water. At that time sickness often followed feeding, and the child began to waste. The food was then changed to beef-juice, egg-albumen, etc.

When admitted there were no physical signs of disease. Feeding was at first carried out with albumen water, changed four days later to peptonised milk. Slight diarrhoea was present; vomiting shortly after food occurred at irregular intervals, vomiting being accompanied with considerable pain. Ten days after admission vomiting began to take place after every feed, though the bowels continued to be open four times daily. No pyloric thickening could be felt, but gastric peristalsis was noticed.

Pyloroplasty was carried out April 25th, 1904. During the succeeding twenty-four hours vomiting occurred twice, and watery diarrhoea was present. The sickness, however, gradually subsided, and a week after the operation the child took its food greedily and looked well. The diarrhoea persisted. Ten days after the date of operation the temperature rose to  $101.6^{\circ}$ . Vomiting recurred on several occasions. Three weeks after the operation the temperature suddenly rose to  $108^{\circ}$ , and death took place.

At the autopsy no peritonitis was found; there were no evidences of enteritis, and the viscera appeared healthy.

**946A.** Portion of the stomach of a child, in the mucosa of which there are a certain number of minute ulcers, possibly of tubercular origin.

From a child (R. V —) *et.* 6 years, admitted under the care of Dr. Sharkey, and who died January, 1902, of general tuberculosis, with fever simulating typhoid.

After death the bronchial glands were found caseous and breaking down. There were a few small shallow ulcers in the lower end of the ileum; muco-pus was present in the right tympanum, the membrane of which was intact.

**984C.** The stomach of a man who died four months after poisoning himself with hydrochloric acid. The organ, which has been inverted, is much contracted, and at the left end or fundus the surface is glistening, dense, and smooth from the cicatrization following necrosis of the mucosa.

**1027A.** Portion of the colon of a child one year of age, which is greatly dilated, without the presence of any organic disease. The dilatation ceases abruptly at the lower or pelvic part.

From a child (W. M.—) *æt.* 1 year, admitted under the care of Dr. Sharkey, June 22nd, 1904, with a history of acute obstruction of five days' duration. The abdomen, which was enormously distended, was opened and the dilated bowel incised, the incision in the gut being then stitched up. The child was too ill for any further procedure. Death took place the next day.

The distended colon was found, after death, to fill the whole abdomen. The rectum and the ascending colon were but little affected. There was general peritonitis. The base of each lung was collapsed.

**1029A.** Portion of the mesentery with the corresponding part of the intestine. The latter is swollen, and of a deep plum colour from congestion and hæmorrhage arising from thrombosis of the superior mesenteric and splenic veins. In the omentum, in the blood-stained fat, many veins filled with recent dark coagulum may be recognised.

From a man *æt.* 57, who had suffered from attacks of abdominal pain for six weeks; there was some amount of vomiting; no loss of flesh or of strength.

July 4th, 1902, at 7.30 a.m., he suffered from a severe attack, with some collapse; retching, and vomiting of small quantities of fluid.

At 3 p.m. the left rectus abdominis was found to be tense in its lower part; this point was somewhat tender, and was the chief seat of pain. By means of an enema a small amount of fæces with small masses of blood-stained mucus were brought away. The patient became much worse during the night.

July 5th, at 12.30 p.m., the abdomen was opened by median incision; a quantity of slightly blood-stained fluid was found. In the left ilio-lumbar region a coil of gut was felt, like an arch, swollen and rigid. On examination it was found to be smooth and bright on the surface, but of a deep black-red colour, lightening towards the ends. The mesentery was moderately swollen, and showed some purple patches. The affected portion was excised, and an end-to-end anastomosis made.

For a few hours the pain disappeared, and there was general improvement. Pain and bloody vomiting, however, returned, and death took place at 8.30 on July 6th, sixty-one hours from the onset of the attack.

At the autopsy it was found that the portion of gut excised had lain five feet from the pylorus. Above the line of suture, the jejunum was found congested. The branches of the superior mesenteric vein corresponding with this piece of bowel were filled with recent clot, as were also those down almost to the end of the jejunum; the intestine below the line of suture was little altered. The superior mesenteric trunk (its upper end) and the portal and splenic veins, for about half an inch were filled with decolorised and adherent clot of some age. The rest of the splenic vein was converted into a cord. The spleen weighed nine ounces and was firm. The branches of the cœliac axis and superior mesenteric artery were normal. The stomach and duodenum showed no signs of ulceration, old or recent. The recent thrombosis involving the mesenteric vein probably spread from the older organised clot in the splenic; but the causation of the splenic thrombosis was not clear.

Presented by Stanley Boyd, Esq.

- 1071C.** A piece of small intestine from the vicinity of the ileo-cæcal valve. The mucosa, except in places between the valvulæ conniventes, presents a dull greyish necrotic surface, the condition having arisen from a terminal infection in a case of chronic nephritis. The disease shown was limited to the last sixteen inches of the small intestine.

From a woman æt. 37, admitted under the care of Dr. Hawkins, May 11th, 1904. The patient had been under treatment for Bright's disease for five years previously. For the last two or three years she had been treated, without much benefit, for chronic constipation. Three weeks before admission acute diarrhœa followed a dose of *Cascara sagrada*.

After admission the patient kept almost continuously crying and chattering. The abdomen was tender on palpation. The urine contained albumen. The patient became weaker, and died on May 14th.

At the autopsy the last two and a half feet of the small intestine were found to be black and gangrenous; there was intense peritonitis of the affected coils. The inner surface of the affected portion was dark, and the folds of mucous membrane were covered with an adherent yellow slough. The kidneys were small, tough, and pale; the cortex diminished in thickness. The left ventricle of the heart was hypertrophied; there was no valvular disease.

- 1075A.** A small piece of the duodenum, excised for an ulcer of the mucosa, which led to the minute perforation to be seen at the back of the specimen.

J. B—, *æt.* 40, admitted under the care of Mr. Ballance, August, 1902. There was a history of dyspepsia of some years' standing, accompanied with vomiting and occasional hæmatemesis. The patient was addicted to alcohol. Perforation of the ulcer had occurred twenty-three hours before operation. The ulcer was situated on the anterior wall of the duodenum, immediately beyond the pylorus. The ulcer was excised, and the resulting aperture sutured and covered with an omental graft. The peritoneal cavity contained a large amount of turbid fluid, but there was very slight peritonitis. Saline irrigation of the abdominal cavity was carried out. Rectal feeding was resorted to for two days. After this the patient was fed for nine days with fluids only. Convalescence was uninterrupted.

- 1106A. A laminated concretion which was removed from a perforated vermiform appendix. It measures about three-quarters of an inch in its chief axis, and consists mainly of pale brown faecal material. The appendix, around which there was a considerable amount of dense inflammatory thickening, was removed.

From a youth *æt.* 15, admitted under the care of Mr. Sargent, December 21st, 1904. The patient's illness dated from ten days previously, and came on with a sudden attack of abdominal pain, localised to the right iliac fossa. He continued his work (that of a messenger) for two days, but the next day the pain recurred with great severity, and was accompanied with vomiting. On admission a rounded swelling could be felt in the right iliac fossa. Recovery after the removal of the appendix was uneventful.

- 1117A. The cæcum, with the terminal portion of the ileum and part of the colon, from a case of diffuse sarcomatosis of the intestine. In varying degrees the mucosa and submucous tissue of all the parts shown are thickened in an irregular or tuberoso manner by the growth of an almost homogeneous whitish neoplasm. The cæcum is the least affected; its appendix has entirely escaped. In the divided fat in the angle between the ileum and the cæcum a lymphatic gland is shown, enlarged from secondary infection. Histologically the new growth consists of large polyhedral cells, which infiltrate the muscular coat as well as the mucosa; the cell growth has no connection with the epithelium of the glands. The cells have a certain degree of plexiform disposition, which would allow of the growth being classed as a plexiform sarcoma or malignant endothelioma.

From a woman *æt.* 60, admitted under the care of Mr. Robinson, June 10th, 1903. Her health had been quite good until July, 1902, when the patient first suffered from abdominal pain. This gradually increased, and the abdomen became distended. Attacks of vomiting lasting two or three days also occurred.

June 11th.—Laparotomy was carried out, and a large amount of fluid found in the peritoneal cavity was withdrawn by means of a trochar. A growth was then discovered extending along the large bowel, the small intestine being also hard, and the omentum matted. The gall-bladder was as large as an orange. The abdomen was closed, as operation was impracticable.

Death took place the next day.

Microscopical examination of the cardia, pylorus, small intestine (in several places), colon, rectum, mesenteric and mediastinal glands, and omentum showed the presence of a similar new growth.

- 1117B.** Portion of small intestine which was excised for the malignant growth shown. The tumour forms a spheroidal mass about three inches in its chief diameter, which infiltrates the walls of the bowel, and projects with an ulcerated surface into its lumen. Histologically the growth is a spindle-celled sarcoma.

From a man *æt.* 33, admitted under the care of Mr. Wallace, September 4th, 1904. There was a history of pain in the right side of the abdomen extending over a period of nine months; occasional nausea, no vomiting. Thirty-six hours before admission the patient had a sudden attack of acute pain with repeated vomiting. The pain was at first general, but subsequently localised to the right iliac fossa. Temp. 100°; pulse 144. The abdomen was distended, rigid, and immobile. Rectal examination was negative.

Laparotomy was at once performed. The omentum was found thickened and infiltrated, and there was abundant fluid in the abdominal cavity. The appendix was normal. In the neighbourhood of the ileo-colic junction there was a tumour the size of a fist, and a small perforation of the gut. The mass was resected, and a Paul's tube secured in each end of the bowel. The peritoneum was washed out and drained. The patient became rapidly worse, and died two days later.

- 1135E.** A sample of chyle-like ascitic fluid, the milkiness of which is due, not to the presence of fat, but of albuminous granules. The fluid has been preserved by means of chloroform; its opacity will be apparent on shaking.

From a patient (H. G.) *æt.* 39, admitted into St. Thomas's Hospital under the care of Dr. Sharkey, April, 1905, suffering from what was diagnosed as cirrhosis of the liver.

The fluid withdrawn from the abdomen resembled milk; it was alkaline, and had a sp. gr. of 1016. Microscopic examination showed the presence of white and red cells in small numbers. The fluid was found to contain a large quantity of albumen, becoming solid on boiling with the addition of acetic acid. Urea was present in the proportion of two grains to the ounce. Fehling's solution was reduced. No fat and no cholesterin were found; a large number of granules were deposited on centrifugalisation, but these gave no red colour with "scharlach."

A second amount was withdrawn on April 12th, 1906. Like the first, it gave no evidence of fat. Saturation with magnesium sulphate precipitated all the proteids, the filtered fluid being clear. Albumen and globulin were present in about equal proportions. On digesting with trypsin at 37° C., albumoses and peptones were found. After filtration through a Chamberland candle, the clear filtrate, on boiling, with the addition of acetic acid, showed only a slight trace of albumen; both carbonate and phosphate were present, and urea in the proportion of two grains to the fluid ounce. Crystals of phenyl-glucosazone were obtained.

On agitation with ether, and allowing to stand for twelve hours, the turbidity was removed, the fluid gradually becoming gelatinous. The ethereal extract showed the presence of fat in very small quantities. Xylol and chloroform produced a very dense precipitate. Two other tappings appear to have been carried out, but the fluid withdrawn was not typically milky.

- 1143A.** Portion of the peritoneum of an ox, the free surface of which is thickly covered with clusters of firm nodules of necrotic tubercular tissue. The divided surface of the nodules, as seen at either edge of the specimen, is opaque and of pale yellow colour, with whiter points of calcification. Microscopic examination shows the presence of large numbers of acid-fast bacilli in the caseous substance, and many in the multinuclear giant cells, which are numerous in the new tissue.

Presented by H. Hammond Smith, Esq.

- 1149B.** Portion of the small intestine of a child eight months old. In the mesentery there is a cluster of cysts, the largest as large as a hen's egg, the presence of which led to intestinal obstruction.

From a patient admitted into the East London Hospital for Children under the care of Dr. H. M. Fletcher. The parts shown were excised, but death occurred a few hours afterwards.

Presented by L. S. Dudgeon, Esq.

- 1157A.** A large portion of omentum which was excised during life, and in connection with which a large number of hydatid cysts have grown. Some of the cysts hold a normal echinococcus; in others the parasite is dead, and the cyst wall contracted on its remains.

Two years previously the patient was in Guy's Hospital, where a pelvic cyst was drained. When admitted into St. Thomas's Home several spherical swellings were palpable over the whole of the right side of the abdomen. At the operation, which was performed by Mr. C. S. Wallace, the surface of the liver felt normal; the spleen was not seen.

- 1196A.** Portion of small intestine in which intussusception was induced by the growth of the papilloma shown, which formed the head of the protrusion; the extreme diameter of the tumour is nearly an inch. The inner tube is much blood-stained from hæmorrhage. The polypus itself is of an ashy grey colour, and appears to have become gangrenous.

From a woman æt. 22, admitted under the care of Mr. Ballance, February 3rd, 1904. Her health had been excellent except for obstinate constipation. Two days before admission, there was an onset of acute pain in the right side of the abdomen, accompanied with vomiting which was at first severe, but gradually ceased. The bowels had not been opened for four days; no blood or mucus had been passed.

The abdomen was distended, with marked prominence in the right iliac region. Palpation revealed a large sausage-shaped mass, about six inches in length, extending obliquely across from the right iliac region towards the symphysis pubis; it was freely moveable and tender on palpation; percussion note resonant. The same day laparotomy was performed through the right rectus; a distended coil of intestine above the intussusception was opened and drained. As the intussuscepted bowel appeared black and gangrenous, fifty-one inches were resected, union being effected by axial anastomosis. Recovery was uneventful.

- 1278B.** The parts concerned in a hernia of the diaphragm which followed a perforation made with a poignard. The aperture in the diaphragm is at present circular, an inch and a quarter in diameter, and lies two and a half inches above the lowest part of the left costal margin, the protrusion itself being close behind the ribs and free in the pleural cavity. In relation to the pericardium, the aperture (which is altogether in the muscular portion of the diaphragm) lies one inch posteriorly to the limit of the pericardial sac. The protrusion has no proper sac of peritoneum, but a spurious investment furnished by the



displaced omentum; this covering is either incomplete or adherent over parts of the bowel, *i. e.* no membrane can be raised in the latter situations as it can elsewhere. There is no communication between the pleural and peritoneal cavities. On the inferior aspect a process of omentum, together with ingoing and outcoming portions of colon, may be recognised occupying the diaphragmatic aperture; neither the omentum nor the intestine admits of withdrawal. Between the two ends of the loop of colon there is a space through which the fore-finger could readily be passed into the sac.

From a man *æt.* 30, admitted into St. Thomas's Hospital under the care of Dr. Hector Mackenzie, April 15th, 1901, in a state of collapse, and complaining of pain in the upper part of the abdomen, sickness, and great thirst. The bowels had not acted for two days.

The history was that the patient had been stabbed on the left side seven or eight years previously, at the site marked by a scar now present on the left side of the chest in the anterior axillary line. Three years after this injury he was seized with an attack of pain in the left side of the abdomen and severe vomiting. There was some tenderness in the epigastrium. Abdominal exploration was carried out, an incision being made under the left costal margin, commencing two inches to the left of the middle line, and extending outwards for four inches. After prolonged search the stomach was withdrawn from the chest; the organ showed no tendency to re-enter the space. The patient was too ill to allow of further radical procedures. Pain and vomiting ceased, but the patient continued very excitable, and died on April 19th.

At the autopsy the stomach was found to present an indurated red line on the anterior surface, to the pyloric side of its mid-line. This mark probably indicated the position in which the stomach had been originally incarcerated in the opening in the diaphragm.

Pleurisy was present on both sides, and the lower lobe of the left lung was solid from septic pneumonia.

(W. H. Battle, '*Lancet*,' 1901.)

**1281B.** Portion of the abdominal wall with the upper part of the urinary bladder and a piece of the rectum. Between the bladder and rectum, projecting from the left side, in the upper part of the recto-vesical pouch, is the somewhat hemispherical swelling of a hernial sac. The sac itself, the mouth of which is about an inch in diameter, lies behind the abdominal wall in the subperitoneal connective tissue, and is thence continued forwards through a narrow neck, externally to the deep epigastric artery, into the upper part of the inguinal canal. At

the back of the preparation the parts have been dissected to show the vas deferens (marked with a piece of red glass) and spermatic vessels, with the fat in the inguinal canal and the extension of the sac into the latter.

The patient, a man *æt.* 54, was admitted January, 1901. A left inguinal hernia had been present for many years; whether it had existed from birth could not be ascertained. From January 19th no passage of *fæces* or of flatus had occurred; offensive vomiting shortly afterwards set in, and he was admitted on January 20th. The abdomen was greatly distended; no definite tenderness; percussion note tympanitic; nothing abnormal could be felt *per rectum*. Both inguinal canals were free of any hernial tumour, and the testes were normally flexed.

At the operation, a vertical incision having been made in the median line below the umbilicus, a loop of small gut and matted omentum were found entering through a small opening in a pouch situated behind the left abdominal wall and to the right side of the bladder. As the edge of the opening tightly constricted the contents of the sac, its margin was nicked, and the omentum withdrawn; the gut, however, was adherent and irreducible. As the condition discovered appeared to be related to the inguinal hernia present, the inguinal canal was opened up in the usual way from the front, but found to contain an empty hernial sac. On following this up to the internal ring there was seen presenting in the opening itself, but not projecting through it, bowel, which was firmly adherent, quite black, and easily lacerated on attempted separation. It was evident that the bowel occupied, and was strangulated in, a pouch behind the abdominal wall; and also that a loop of intestine occupying this pouch was gangrenous and adherent. The adherent loop was separated, withdrawn through the internal opening, and brought out externally through the abdominal wound. The bowel for four and a half inches was gangrenous; this portion was excised and an end-to-end junction made. The sac itself was thoroughly washed out, but not excised; a gauze drain was placed down to the inguinal ring, and both the abdominal and inguinal wounds were sutured up. Death took place a few hours later from collapse.

(H. B. Robinson, 'Medico-Chirurgical Trans.,' vol. lxxxvii, p. 597.)

**1293A.** A slice of liver from a case of heart disease in which the venous system has become engorged from back pressure. The congestion of the liver is highly pronounced, but between the congested vessels branching lines of paler hepatic tissue occur, producing the "nutmeg" appearance characteristic of passive engorgement.

From a man, J. C—, admitted under the care of Dr. Hawkins, February, 1901. Death took place from phthisis and cardiac failure.

At the autopsy extensive cavitation of the upper lobe of each lung was found. The right side of the heart was dilated; the left ventricle hypertrophied. The kidneys were contracted from chronic nephritis.

- 1293B.** Portion of the right lobe of the liver of a child 13 years of age, who died thirteen hours after having been run over by a milk cart. A short way from its right border the liver presents an irregular, closed rent, about four inches in extent.

The patient was admitted under the care of Mr. Battle, March, 1904. On admission there was a large scalp wound on the left side of the head; the left clavicle was dislocated forwards at the sterno-clavicular articulation, and the ribs from the sixth to the eighth were fractured on the right side; the second rib was fractured on the left. There was no tenderness on palpation, but the abdominal wall was kept rigid.

After admission the breathing became more rapid and shallow; emphysema spread to the neck and over the face, and death shortly afterwards occurred. At the autopsy double pneumothorax was found. The abdomen contained a pint and a half of fluid blood, for the most part collected in the pelvis. The right kidney showed a small rupture at the lower end. The cranium was uninjured, and the brain was normal.

- 1294A.** Portion of the liver of an infant. The divided surface is of a pale yellow colour and almost uniform texture, the individual lobules being considerably enlarged and their boundaries hardly discernible, the appearances being due to an extreme degree of fatty infiltration of the hepatic cells. The liver as a whole was notably larger than natural.

From a particularly fat, rickety child who died of bronchopneumonia, under the care of Dr. H. Morley Fletcher, in the East London Hospital for Children.

Presented by L. S. Dudgeon, Esq.

- 1297B.** A slice of a liver from a case of pernicious anæmia. The cut surface has been treated with a solution of ferrocyanide of potassium, and afterwards with dilute hydrochloric acid, with the resulting formation of ferrocyanide of iron (Prussian blue), owing to the presence of free iron in the tissue.

- 1297C.** A slice of liver from a woman who died of acute lymphocythæmia. The presence of a notable amount of iron in the tissue has been shown by steeping the parts in a solution of

ferrocyanide of potassium, and subsequently in dilute hydrochloric acid.

From a patient (V. A.—) æt. 37, admitted under the care of Dr. Turney, August, 1904. The disease was of three months' duration only. His illness appears to have dated from the beginning of the previous month, when he noticed that he became easily fatigued, and was becoming anæmic. In the early part of August he was compelled to take to his bed owing to increasing weakness and persistent headache.

When admitted he was intensely weak and very anæmic. On examination of the mouth a quantity of offensive pus could be made to ooze up around the stumps of teeth in both jaws. Large and tender glands could be felt in the submaxillary triangle and around the lower jaw. The liver and spleen were enlarged. No true glandular enlargements were detectable beyond those referred to as a result of the septic condition of the mouth.

(L. S. Dudgeon, 'Trans. Path. Soc.,' vol. lvi, p. 114.)

**1297D.** A slice from the liver of a rabbit. The section is riddled with small cavities, due to the formation of gas in the vessels, a condition sometimes spoken of as "foaming liver." Into the auricular vein 1 c.cm. of a pure culture of *Bacillus aerogenes capsulatus* was injected. Three minutes later the animal was killed, and the body then placed in the incubator for twenty-four hours at 22° C. The bacilli, which had reached the various parts through the blood-stream, produced a notable amount of gas during their growth after the death of the animal.

Presented by L. S. Dudgeon, Esq.

**1312B.** Portion of a liver. The section displays throughout an abundant formation of fibrous tissue which parts the several lobules (unilobular cirrhosis), and is uniformly distributed throughout the organ. The surface of the organ is finely granular in correspondence with the disposition of the fibrous tissue.

From a woman æt. 52, who had suffered from jaundice during the last seven years of her life. Considerable enlargement of the liver was diagnosed. About a year from the commencement of the jaundice, when the gall-bladder was found to contain many calculi, cholecystostomy was carried out, the biliary fistula being allowed to close at the latter end of 1896, when the general condition was good.

In 1901 the jaundice had reappeared, and the patient died August, 1902.

After death the hepatic and common bile ducts were found much dilated, and freely moveable in the cavity formed by their dilated channels there lay a biliary calculus, which had probably been in the duct since the commencement of the illness.

(F. Parkes Weber, 'Trans. Path. Soc.,' vol. liv, p. 105.)

Presented by Dr. F. Parkes Weber.

- 1317B.** Two slices of the liver of a child. The organ is granular on the surface, and abnormally fibrous in the section. The divided surface displays many spheroidal formations, the largest a quarter of an inch in diameter; some of these project from the surface, others are deeply embedded in the organ; some are bile-stained and green. Histologically there is a fine cirrhosis, the spherical formations consisting of normal hepatic tissue, and representing foci, apparently, of regeneration to compensate for the destruction of tissue elsewhere. The pathogenesis of the disease was not determined, though it was probably syphilitic.

Presented by L. S. Dudgeon, Esq.

- 1333A.** A slice from a liver, in which there are a large number of firm carcinomatous tumours, many of which have coalesced. The organ is enlarged, and its surface coarsely and lowly lobular from the projection of the growths, most of which are centrally depressed or umbilicated from atrophy and shrinkage. The organ weighed thirteen pounds eight ounces. The primary growth was at the pylorus.

From a man *æt.* 47, admitted under the care of Dr. Sharkey, October, 1903. For six months before admission the patient had experienced slight pain in the upper part of the abdomen; this was accompanied with loss of appetite and vomiting. Loss of weight ensued.

On admission, the edge of the liver was found to be six and a half inches below the ensiform cartilage; it was hard and somewhat rounded, and the surface presented many large tuberoso irregularities.

On November 19th oedema of the abdominal wall was noticed, and the superficial veins were seen to be distended. Oedema of the scrotum and legs gradually developed, and the abdominal pain became very severe. Death occurred on December 2nd.

At the autopsy a moderate amount of ascites was found; stomach greatly dilated, with a carcinomatous ulcer immediately within the pyloric orifice. The lymphatic glands in the lesser omentum and along the greater curvature were enlarged from secondary disease.

The lungs were oedematous, and contained numerous minute nodules of new growth. Histologically, the carcinoma was found to be of the columnar-celled variety.

- 1352A.** A slice of a child's liver, the divided surface of which presents many spaces of various sizes, the largest of which are about the size of peas, and contain a solid bile-stained material; most of the smaller present a similar dark bile-stained centre. The walls of the spaces are of considerable thickness, of an opaque white, and not sharply circumscribed on the outer aspect. Histological examination shows the lesion to be tubercular, the disease involving the bile-ducts,—tubercular cholangitis.

From a child (C. S—) *æt.* 3 years, admitted into the East London for Children, under the care of Dr. Coutts. Death occurred from general tuberculosis, following a history of cough and wasting of two months' duration.

Presented by L. S. Dudgeon, Esq.

- 1406A.** A gall-stone of composite structure, consisting of several faceted calculi combined into a single mass by a continuous external deposit of pigmented cholesterin, like that composing the rest of the calculi.

- 1412E.** A collection of faceted calculi which were removed with the gall-bladder in a case of suppurative cholecystitis.

From a woman *æt.* 46, admitted in November, 1902, under the care of Mr. Clutton. When a child she had had typhoid fever. Biliary colic, followed by jaundice, had been noticed for twelve years.

On admission the gall-bladder was easily felt; urine normal; temp. 99°. The gall-bladder, which was adherent to the duodenum, was removed.

- 1412F.** A series of gall-stones of which the largest is of somewhat conical shape and measures two inches in extreme diameter. The latter was removed from the common bile-duct, the rest from the gall-bladder.

G. R—, *æt.* 37, admitted under the care of Mr. Pitts, July, 1903. In 1894 the patient suffered from dull aching pain in the right side, and jaundice. During the years 1899, 1900, she had lived in India, where she contracted malaria. During that period she was subject to many attacks of pain. Five months before admission to the hos-

pital pain in the right side, shooting to the back and right breast, and jaundice, were noticed.

On July 23rd the gall-bladder and common bile-duct were opened, the large calculus shown in the preparation being removed from the bile-duct, and about thirty calculi from the gall-bladder; both cavities were drained.

When the patient was discharged in August, the biliary fistula was closing.

**1425A.** A slice of a "sago" spleen, in which the enlarged lardaceous Malpighian corpuscles have been coloured of a mahogany brown by means of iodine solution, the rest of the tissue being of a pale yellow colour.

**1441A.** The thymus of an infant who died suddenly. The gland is remarkably large, measuring two and a half inches in its vertical axis, and being proportionally increased in other directions. At the back of the specimen a piece has been cut away, to show a central cavity which in the recent state was filled with a milky fluid holding an abundance of lymphocytes.

(L. S. Dudgeon, 'Path. Soc. Trans.,' vol. lv, p. 187.)

**1453B.** An adrenal which is the seat of carcinomatous growth. The organ retains its general form, though so enlarged as to measure three inches in its extreme diameter. Both the adrenals were diseased, but in unequal degree.

J. R—, æt. 45, admitted with profuse hæmaturia in 1904, under the care of Mr. Abbott. The left kidney, which was enlarged and easily palpable, was removed. Death occurred about sixteen weeks later from asthenia.

At the autopsy a small secondary growth was found in the right kidney at the apex of one pyramid; bladder normal. The liver was full of metastatic tumours, and there were similar formations in the lumbar glands, as well as in the lungs and bronchial glands. The structure of the adrenal growth is suggestive of an adrenal origin; on this supposition the other lesions, including that for which the kidney was excised, would constitute a secondary series.

**1461B.** An unusually large cyst about five and a half inches in diameter, which was removed from the thyroid. Its interior is lined with irregular flakes of altered blood.

From a man *æt.* 60, in whom the cyst had been noticed for twenty years. The patient was admitted under the care of Mr. Wallace, January, 1904. Two sisters have goitres, but in one the swelling has almost disappeared. For the first forty-four years of his life the patient lived at Headcorn, in Kent. The gradual increase of the swelling gave place to a more rapid one during the last six months. There was no dysphagia, but for thirteen years there had been dyspnoea on exertion.

On admission the circumference of the neck, taken over the most prominent part of the swelling, was two feet. The large cyst moved on deglutition, and slightly overhung the sternum. On January 14th it was tapped with a trochar, a pint of fluid being withdrawn. Subsequent accumulation occurred, and on January 27th the cyst was excised through a transverse incision. Convalescence was uninterrupted.

**1471A.** A transverse section of a goitrous thyroid in which a carcinoma has grown, the malignant disease being distinguishable by its greater opacity. The trachea is laterally flattened and displaced to one side by the neoplasm. Histologically, the carcinoma consists of closely-set columns of cells which in process of growth acquire a lumen and come to resemble the proper thyroid tissue.

From a woman *æt.* 42, admitted March, 1903, into the Cumberland Infirmary on account of a tumour over the left frontal region, which had been incised under the belief that it was a sebaceous cyst.

The tumour was first noticed twelve months previously, when it was the size of a nut, and gradually enlarged, though the increase had been rapid during the six weeks prior to admission. Headaches, vertigo, and occasional vomiting were experienced before the tumour appeared, but not afterwards.

The tumour occupied the left frontal region one and a half inches above the centre of the left supra-orbital ridge, and was as large as half an orange. There was also a bilateral "goitre" of moderate size which was not causing any dyspnoea. The neck had been "thick" for years.

On dealing with the cranial growth it was found to spring from the bone, and a large perforation with irregular edge existed at its base. Much hæmorrhage arising, the growth was rapidly removed below the level of the skull, and the edges of the perforation trimmed with bone forceps.

Owing to its pulsation the tumour was thought to be connected with the subjacent brain, but this did not prove to be the case.

Histological examination of this tumour proved it to be a metastatic thyroïdal carcinoma.

For a week it seemed not impossible that recovery would take



place, but a run of high temperature was then noted, and death occurred seventeen days after admission. Permission for a complete examination was not obtained.

(H. A. Lediard, 'Trans. Path. Soc.,' vol. lv.)

- 1472B.** A dissection of the thyroid and thymus glands of a girl 14 years of age who died under an anæsthetic whilst being prepared for an operation for ulcer of the cornea. The thymus is notably enlarged, measuring three inches in its extreme length; on the right side it reaches the corresponding lobe of the thyroid gland.

E. R—, æt. 14, admitted October, 1902, under the care of Mr. Lawford, suffering from corneal ulcer. Chloroform was administered. After two or three minutes' inhalation the child turned pale, and the breathing became shallow. Artificial respiration was at once started; brandy and strychnia were injected, and the battery applied, an hour being spent in efforts to restore animation.

After death the right side of the heart was found rather large; the ventricle contained no clot. The lungs were quite healthy. The spleen weighed 6½ oz.; the Malpighian corpuscles were visible; tonsils large; no lymphatic hypertrophy in the intestines; the mesenteric glands were enlarged. The brain and pituitary body were normal.

- 1487A.** An irregular ring of calcareous substance about three inches in diameter which lay in the auriculo-ventricular groove, and represents calcified inflammatory tissue.

From a man æt. 60, with a history of malaria and an uncertain one of alcoholism, but none of acute rheumatism.

In November, 1904, the patient complained of shortness of breath and palpitation, and for some time afterwards suffered from frequent attacks of pain in the chest. Examination revealed the presence of extensive double pleurisy and pericarditis. No definite cardiac murmurs could be detected, though the aortic valve emitted a flapping sound. The liver was enlarged. Jaundice was observed during the last few weeks of life. Death occurred March, 1905.

At the autopsy the pleuræ were found adherent; the liver was fatty, and passively congested.

Presented by W. Ibbotson, Esq.

- 1531A.** Portion of a heart laid open to expose the aortic valve. The right anterior cusp of the latter has been destroyed by ulcerative endocarditis, its site giving attachment to a large spheroidal foliated vegetation of granulation tissue and blood-

clot. The infrajacent portion of the muscular substance has been involved, and in the section of the interventricular wall there is shown part of an abscess which tracks into the ventricle in the situation referred to.

From a man *æt.* 43, admitted under Mr. Makin, December 7th, 1903. On admission there were signs of left basal pneumonia; temp. 100° F.; the patient was delirious. A periarticular abscess around the left ankle was incised and drained. The pulmonary consolidation increased a few days later, and the patient died on December 30th.

- 1612A.** Portion of a right popliteal artery with part of the posterior tibial, from a man in whom the lower limb was amputated for gangrene. The vessel has been divided longitudinally, and in such a manner as to remove the anterior tibial. The whole of the vessel shown is filled with a recent thrombus, the upper end of which corresponds with the origin of the superior external articular branch. The thrombus is of deep black colour, and completely fills the vessel. The artery is extensively sclerosed and deformed from irregular thickenings of the intima. The immediate cause of the thrombosis appears to be a particularly prominent ingrowth of the intima which almost occludes the popliteal artery at the highest part of the thrombus. The deeper part of this thickening (as elsewhere) is opaque white from calcification, and the media is notably thinned beneath it.

From a man (I. O—) *æt.* 60, a labourer, admitted under Mr. Abbott, January, 1903. Thirteen weeks previously he had been laid up with rheumatism. An hour before admission, whilst at his work, he was suddenly seized with violent pain in the right leg and foot; the limb became useless and he fell to the ground.

On examination, the right leg below the knee was found cold and pale; the sole of the foot and toes insensitive to touch; there was a zone of hyperæsthesia four inches below the knee. The tibial and popliteal pulses were absent.

An hour later the foot was blanched as far as the medio-tarsal joint, and from this point to the ankle there was distinct mottling. No cardiac murmur; there was arterial sclerosis; albuminuria.

On the fifth day a sudden sharp attack of pain occurred in the opposite (left) limb; there was sudden cessation of pulsation in the *dorsalis pedis*; the leg was congested as far as the knee.

As the gangrene of the right foot was extending, amputation was performed through the lower third of the right thigh, on the twelfth day from the onset of the illness. Union occurred by first intention.

Three days later the left foot and leg passed into a state of gan-

grene. Signs of pulmonary oedema appeared on the nineteenth day. Death took place on the twenty-first.

After death the anterior and posterior tibial arteries of the left side were found to be sclerosed, but no thrombosis was discovered in their lower half. The cardiac valves were competent; mitral cusps thickened; there was a fusiform dilatation of the third part of the aortic arch. The kidneys contained many infarcts, both old and recent.

**1735D.** A group of cervical glands, in varying degrees, enlarged from tubercular disease. The surfaces of those divided show the opaque white necrotic or caseous areas characteristic of the disease. The largest, central mass comprises more than a single gland, the parts having become secondarily adherent. The axillary glands were likewise affected.

The glands were excised from a woman (A. S.—) *æt.* 20, who had noticed the disease seven months, and was admitted under the care of Mr. Pitts, February, 1903. There was a strong family history of tuberculosis, one uncle and one aunt on both sides of the family having died of "consumption." The patient's elder sister suffers from enlarged cervical glands.

Six years before admission some slightly enlarged glands were first observed in the left axilla; these were removed three years ago, the mass having then reached the size of a cricket ball. The enlargement of the left side of the neck was first observed six months before admission; the axillary glands of both sides were as large as peas. Those shown in the preparation were removed from the left anterior and posterior triangles.

The patient was readmitted in October, 1903, when further masses were excised from the left axilla and the left side of the neck.

**1739E.** A guinea-pig dissected to show the progress of tubercular infection after experimental inoculation made for the purpose of clinical diagnosis. Into the subcutaneous tissue of the right thigh was injected 1 c.cm. of centrifugised and washed sediment of urine from a case in which the urine contained acid-fast bacilli. The injection was made on February 6th, 1904, and the animal was killed on March 11th, *i.e.* nearly five weeks later. A fortnight after the injection a nodule had formed at the site of infection, and the inguinal glands of the corresponding side were enlarged. A rod of red glass has been used to mark the discharging tubercular ulcer which ensued. The inguinal glands of the right side are enlarged and adherent to the surrounding fat; within the abdomen certain of

the lumbar glands are enlarged, but those on the left side have escaped. The spleen has been divided to show its involvement, the organ being strewn with miliary tubercles. On the surface of the liver a few opaque tubercles may likewise be discerned. The thoracic viscera are not yet affected.

Presented by S. G. Shattock, Esq.

**1827A.** A nail which was taken after death from the lung, in which it had lain for two years. Its surface is much eroded.

From a man *æt.* 29, a carpenter, who fell asleep with the nail in his mouth, whence it slipped down the trachea without his being aware of it, for on awaking he thought that he must have swallowed the foreign body.

He suffered no inconvenience until a year later, when he suddenly expectorated some yellow fluid of an offensive character. Six months before admission the patient coughed up a teaspoonful of bright blood, and this several times recurred.

In the Brompton Hospital attempts were made to remove the nail by means of low tracheotomy.

He came into St. Thomas's in January, 1906, when inversion of the patient and shaking were practised. By skiagraphy the nail was localised on the right side, directed downwards and to the right at an angle of 30° to the vertical. Portions of the 4th and 5th right ribs were removed, and the parietal and visceral pleuræ were stitched together after incision of the former. Slight bronchitis followed. When this had subsided the operation wound was reopened, and an incision made into the lung. A powerful magnet was then introduced in the direction of the nail, but without any successful result. The temperature rose on the following day to 101·6°, and remained persistently high, whilst signs of consolidation of the lower part of the right lung became manifest; the wound suppurated, and death occurred at the end of a fortnight.

At the autopsy portion of the right lung was found adherent to the parietes at the site of operation; the rest was collapsed. The upper part of the right dome of the thoracic cavity was occupied by an abscess which had formed in the mediastinal connective tissue. The cavity in the lung made by the operation was the seat of a second abscess communicating with the pleura. The bronchi contained pus, and when these were opened up the end of the nail was found projecting a quarter of an inch from the aperture of the first right ventral hyparterial bronchus. The nail was fairly easily extracted by traction, though there was considerable inflammatory change in the tissue around it. The middle lobe of the lung was in a condition of bronchiectasis, the dilated bronchi containing much pus. The upper and lower lobes were unaffected. When the finger was passed for two inches into the operation wound, it was just possible to feel the end of the nail through the lung tissue.

**1848A.** Portion of the lung of a child. The cut surface is closely beset with somewhat opaque solidified areas, of dull yellowish colour, in which the vesicular structure has been filled up with catarrhal products. Over extensive areas the broncho-pneumonic foci are so close that the lung is practically solid. In a few of the foci the solidified substance is in process of breaking down, the centre of such presenting a small excavation.

From an infant, admitted under the care of Dr. Hawkins, 1905, and affected, first, with diarrhoea and vomiting, then with measles and broncho-pneumonia.

On admission the signs at the right base suggested fluid, but aspiration was negative in result. The sounds assumed a cavernous character; and consonating crepitations with impaired resonance developed at the left base.

**1848B.** Portion of a child's lung, which has been rendered almost solid by broncho-pneumonia. At the apex, where the process is least advanced, a considerable area of unsolidified tissue persists. The absence of uniform consolidation appears clearly through the pleura, the surface of the lung being mottled with small opaque foci. In a certain number of the foci central cavitation is in progress, but most of the spaces to be seen in the section are sharply defined, spherical, or tubular, and represent dilated bronchioles, atria, or vesicles. Some of the sharply-defined cavities lie at the surface, and are visible through the pleura.

From a child *et.* 5 years, admitted under Dr. Mackenzie, 1905. There was a history of whooping cough and of measles three years and two years respectively before admission.

When admitted the child was suffering from cough and dyspnoea; the temperature was hectic. Puerile breathing and occasional rhonchi were the only abnormal signs.

At the autopsy the bronchial glands were found caseous; the lung was the seat of tubercular disease. Microscopically, some of the cavities were found to be dilated bronchioles, as indicated by their muscular coat and epithelial lining; some dilated atria, some dilated infundibula; and others, the largest of which are sharp cut and lined with granulation-tissue, represent the results of tissue-necrosis.

**2056B.** The kidney of a man who was crushed in a buffer accident. Both the renal artery and vein are filled with blood-clot, thrombosis having taken place during life. The ureter and renal vessels have been dissected out at the hilum of the kidney.

T. T—, *æt.* 20, admitted under the care of Mr. Makins, June 11th, 1902. Death occurred five days afterwards. The patient sustained fracture of the ischial and pubic rami, of the lower ribs on the left side, and the right humerus.

At the autopsy patchy pneumonia of the right lung was found; no abdominal viscus had been ruptured. Around the left kidney some blood had been effused, and there was blood in the ureter. The bladder was uninjured.

**2058A.** A vertical section of an hypertrophied left kidney. The organ, which is quite normal in structure, measures six inches in length. The other kidney was found to be small, yellow, and tough; its vessels were thrombosed; the clot in the vessels running between the pyramids was adherent and organising. Microscopically the tissue of this kidney presented the appearance of being necrosed; the renal structure being improperly stained, though recognisable.

The patient, a girl (F. N—) *æt.* 18 years, died thirty-two days after being run over by the wheel of a motor car, death being due to the effects of a rupture of the liver. She was admitted under the care of Mr. Pitts, April 11th, 1903.

**2062A.** A left kidney which is the seat of moderately pronounced hydronephrosis. The renal vessels have been dissected out to show the presence of an aberrant renal artery arising from the aorta about a quarter of an inch below the main vessel. The aberrant artery and an accompanying venous tributary which passes into the proper renal vein, course immediately below the hydronephrotic sac in juxtaposition with the ureter. The arterial arrangement suggests that the presence of the aberrant vessel may, by exercising pressure upon the ureter at its junction with the renal pelvis, have led to the hydronephrosis.

The specimen was taken after death from a woman *æt.* 70, who died with pulmonary thrombosis, November, 1902.

**2083A.** A kidney with the upper end of the ureter. The organ is converted into a lobulated sac filled with calcified caseous substance, as a final result of tubercular destruction. The ureter has been involved in the disease, its walls being thickened, and its lumen occupied with similar material.

**2096A.** Portion of a kidney embedded in which is a sharply circumscribed, encapsulated tumour four inches in chief diameter.

It is of uniform texture, and the discoloration of its surface shows it to have been highly vascular. Histologically it presents the characters of an adrenal adenoma, and consists of epithelial cells grouped in polyhedral masses or columns by very fine septa of connective tissue holding capillaries.

The kidney was removed by Mr. Bland-Sutton from a woman *æt.* 42, admitted into the Chelsea Hospital for Women on account of an aching pain in the left side of six months' duration; a moveable swelling had been noticed in the left flank.

(J. S. Fairbairn, 'Path. Soc. Trans.,' vol. liii, p. 184.)

**2115A.** A vertical section of a left kidney with portion of adherent descending colon. A rod of glass has been passed from an abscess of the kidney along a fistulous tract into the colon. The ureter is somewhat dilated. The fistula has possibly resulted from the formation of an abscess about a calculus in one of the calyces, the calculus itself having perhaps subsequently escaped into the colon.

From a man *æt.* 29, who was admitted under the care of Mr. Clutton, February, 1903, with vesical calculus, for which supra-pubic cystotomy was performed. The calculus was composed of ammonio-magnesium phosphate and phosphate of lime.

The patient was discharged, but readmitted December 7th, 1903, with a history of having passed a quantity of mucus and several small calculi. Six weeks before readmission he was seized with severe pain in the left loin, accompanied by vomiting, and followed by hæmaturia. The pain became continuous, and had not the distribution of ureteral colic.

On December 9th the left kidney was explored, and an abscess cavity which was found in connection with it was drained; no calculus was discovered. A fæcal fistula developed three days later, and a few days later the patient stated that at the end of micturition he passed some flatus by the urethra. A rigor occurred on the seventh day after the operation. The fæcal fistula closed within ten days, and the bowels acted with aperients; but death took place on December 22nd.

At the autopsy both ureters were found dilated; the left contained a calculus. In the pelvis of the left kidney there were many small calculi; the renal substance was intensely congested, and showed white streaks in the cortex. The right kidney was hydronephrotic, contained a calculus, and exhibited the results of an acute infective inflammation like the left.

**2130A.** Four calculi of calcium phosphate which were removed from the kidney during life.

From a male *et.* 40, of sedentary occupation (shorthand reporter). For many years the patient had been subject to severe attacks of phosphaturia, especially when overworked.

Four years before the removal of the calculi shown, he had a severe attack of renal colic, followed by hæmaturia.

On October 13th, 1904, he had a severe attack of lumbar pain, followed by a rigor, the temperature reaching 104° F. A similar rigor occurred on each of the following four days, but there was no hæmaturia. The kidney was tender and palpably enlarged.

Lumbar nephro-lithotomy was performed on October 17th, and the calculus removed. The calculus did not lie free in the pelvis, but in a cavity formed at the expense of the lower end of the kidney, the thin renal substance which covered it being soft and yellow in colour.

Convalescence was not noteworthy in any particular, except for the very marked polyuria which followed the operation. The polyuria continued for six weeks, the urine being of a good specific gravity, although as much as 100 or even 128 ounces were passed daily. Crystals of oxalate of lime and sparse stellar phosphates were the only abnormal constituents, except a small amount of blood and albumen.

Six months later the patient had a similar attack of pain, followed by rigors. An exploration was carried out, and a small local abscess in connection with the old calculus cavity was then found, together with some perirenal suppuration. After a few weeks' drainage the patient again got well. The same polyuria was observed as after the first operation; but on this occasion there was often a large deposit of urates. The patient was sent to Contrexeville for six weeks, and came back in good condition, and again resumed his occupation.

Fourteen months after the first operation another attack, consisting of similar pain and rigors, occurred, and on this occasion the kidney was removed. The removed organ was in a condition of general suppurative nephritis—a typical surgical kidney.

The several attacks were probably the result of local renal infection; each was of exactly the same type, the yellow softened area surrounding the calculus noted at the first operation being probably of the same nature as the general change found in the organ after removal.

The polyuria following the nephrectomy was as marked as that following the two former operations. The patient has been in good health for the last seven months.

**2133B.** A sample of urine which was turbid when passed, solely from the presence of the colon bacillus, the micro-organism having now subsided to form a somewhat close whitish sediment.

From a gentleman *et.* 58, suffering from vesical catarrh, probably of gouty origin, and which had resisted all treatment. Until this he



had always been a healthy man, with the exception of a marked tendency to eczema. There was no history of alcohol or syphilis, and no constitutional symptoms. The present trouble (June, 1906) dated from an illness of a year and a half ago. Nothing definite could be ascertained as to the nature of this, except that it confined him to bed for about a week, was attended with moderate fever and marked urinary symptoms, of which there had been no previous experience. Strangury was followed by retention, for which a catheter had to be used. Since then the patient has never been free for any length of time from similar trouble. He complained mainly of a sense of discomfort, at times amounting to pain, referred to the perineum and hypogastrium. Micturition was frequent—three or four times in the night or more, and painful. The urine was described as being generally thick when passed, and often very strong-smelling.

On examination no physical signs of disease were discoverable, except the remains of an eczematous eruption and rather high arterial tension. The urine was strong-smelling, amphoteric, sp. gr. 1020, and showed a very evenly diffused turbidity unaffected by reagents. The bladder was washed out with weak boracic acid three times a week, and fifteen grains of urotropin were given three times a day. Some improvement in the character of the urine took place, but no relief. On August 22nd one of the exacerbations of which the patient complained occurred. In these attacks there was great pain in micturition and a change in the appearance of the urine; a sample of the latter was found to contain pus in some quantity. No prostate could be discovered by rectal examination after passing a sound. No further treatment was thought to be indicated.

Presented by Dr. H. G. Turney.

**2135A.** A kidney of which the upper part is distended into a lowly lobulated fluid swelling about five inches in diameter, by the growth of hydatids.

H. D—, æt. 26, admitted under the care of Mr. Ballance, March, 1901. For five months the patient had noticed pain and swelling in the right lumbar region; there were no urinary symptoms.

On admission there was a visible prominence on the right side of the abdomen, and on palpation a smooth rounded swelling which descended on respiration could be made out. The swelling was moveable, and contained fluid. The urine was normal; the urea excreted amounted to 264 grammes daily, 12 grammes to the ounce. The kidney was removed by the lumbar operation on March 27th. Slight rupture of the swelling took place during the removal.

On April 6th the patient complained of headache, and presented a universal red and irritable rash. Temperature 102° F.

On April 15th desquamation commenced, and the temperature was normal. The further progress was uneventful.

- 2145A.** Portion of a bladder with part of the left ureter. The latter is greatly dilated and much thickened from the impaction and growth of a calculus in its lower end. The calculus measures about an inch and a half in its larger, vertical axis. The kidney was hydronephrotic.

From a man *æt.* 29, admitted for bronchiectasis, under the care of Dr. Hawkins, November, 1901.

In 1897 the patient was in the hospital for vesical calculus, which was removed by supra-pubic cystotomy. He was discharged in January, 1898, but readmitted with symptoms of renal calculus; this calculus was afterwards passed *per urethram*.

In October, 1899, he was again admitted with symptoms of impacted calculus in the neck of the bladder; the stone was removed, the patient leaving the hospital in November, 1899.

During July, 1901, symptoms of calculus again recurred. In October, for the first time, a quantity of pus was coughed up. When the patient came into the hospital in October, 1901, there was evidence of consolidation of the right lower lobe. The lungs were explored by Mr. Makins with a trochar, but with a negative result. Death occurred on October 19th.

At the autopsy each lung was found affected with bronchiectasis; pleural adhesions were present on both sides.

- 2171A.** A papilloma of unusual size which was removed from the urinary bladder. The growth, which measures two and a half inches in diameter, has what appears at first to have an extremely coarse papillary construction; but the coarser processes really consist of more delicate, secondary, closely applied subdivisions.

From a man *æt.* 24, admitted October, 1902, under the care of Mr. H. B. Robinson. The patient had suffered from painful micturition for two years, and from hæmaturia for one week, before admission. Large clots had been at times passed. Examination of the bladder *per rectum* and by means of the sound proved negative. Supra-pubic cystotomy was carried out, and the growth, which was attached just below the orifice of the left ureter, was removed after ligature of its pedicle. The bladder was drained. The patient left the hospital four weeks afterwards.

- 2215A.** Half of a phosphatic calculus formed upon a piece of hazel wood.

The foreign body had perforated the bladder from the rectum, but the wound in the bladder itself had afterwards healed.

Presented by V. Arkle, Esq.

- 2215B.** Half of an oval phosphatic calculus, an inch and three quarters in its longer diameter, which has formed upon an ear of wheat-straw. The calculus, which weighed 32.75 grammes, consists of ammonio-magnesium phosphate and calcium carbonate.

It was removed by supra-pubic operation from the urinary bladder of a man *æt.* 65, who was admitted into the hospital, October, 1904, under the care of Mr. W. H. Battle. About sixteen months previously the ear of wheat-straw had been pushed into the patient's urethra when he was drunk. Irritability of the bladder with pain and hæmaturia had been complained of for a year; there had been an occasional stoppage of the stream during micturition, and six months ago a small calculus was passed. Instrumental examination disclosed the presence of a calculus which was fixed in the neck of the bladder, so that only a small sound could be passed beyond it; the calculus was easily felt in the neighbourhood of the prostate on rectal examination. The urine, which was passed in scanty amounts, was alkaline, and contained much pus, blood, and mucus.

At the operation, on the bladder being opened suprapubically, the stone was found to be impacted in its neck, and was lifted from its position with some difficulty. The mucous membrane of the floor of the bladder was ulcerated, and bled freely as the calculus was extracted. Recovery was complete.

- 2216A.** The bladder and prostate gland together with the testicles of a dog on which double vasectomy was carried out five months before the animal was killed. The animal was fully grown at the time of the operation. Both testicles are of the normal size, and the prostate gland has undergone no atrophy. On microscopic section of the testicle, spermatogenesis was found to be in active progress.

(C. S. Wallace, 'Trans. Path. Soc.,' vol. lvi, p. 90.)

Presented by C. S. Wallace, Esq.

- 2216B.** A vertical section of the pelvis and its viscera, from a dog on which double vasectomy was carried out, each vas having been first ligatured in two places. The operation was done when the animal was full grown. The dog was killed eight months later. The right testicle is of the full size, and the prostate, which has undergone no atrophy, presents a normal

histological structure. The left testicle, like the right, was of the natural size, and microscopic section showed spermatogenesis to be in active progress in the tubuli, and an accumulation of semen in the epididymis, the canal of which was dilated.

(C. S. Wallace, 'Path. Soc. Trans.,' vol. lvi, p. 90.)

Presented by C. S. Wallace, Esq.

**2216C.** The bladder with the prostate gland and membranous portion of the urethra, etc., of a dog upon which, when a puppy, double castration had been carried out, the animal being killed eleven months after the operation. As a result of the removal of both testicles the prostate has failed to grow, its position being just recognisable by the slight swelling of the parts immediately in front of the bladder.

(C. S. Wallace, 'Path. Soc. Trans.,' vol. lvi, p. 98.)

Presented by C. S. Wallace, Esq.

**2222A.** A vertical section of a bladder. The third lobe of the prostate has undergone a localised overgrowth, and forms a hemispherical projection about half an inch in diameter within the bladder, immediately behind the urethral aperture, which is overlapped by it. There is no enlargement of the gland elsewhere, but the hypertrophied and fasciculated condition of the bladder as well as the dilatation of the ureter shows that a pronounced obstruction has been produced by the projection of the middle lobe.

**2224B.** A portion of a bladder with the prostate gland. The latter was uniformly enlarged, and measured about two and a half inches in transverse diameter. The gland was enucleated after the removal of the parts from the body after death, the enucleation being carried out from within the bladder after tearing through the vesical mucosa covering the projecting intra-vesical parts of the prostate. The enucleated left lobe has been mounted at the bottom of the preparation. Above this is suspended a capsule which was artificially isolated after the removal of the gland. This capsule has been artificially

made by subdividing the thicker capsule which lay beyond the more readily isolable adenomatous enlargement of the prostate. As the capsule comprises microscopic remnants of glandular tissue it is clear that the mass enucleated, and shown at the bottom of the preparation, does not represent the prostate in its absolute entirety. The bladder is hypertrophied and fasciculated as a result of the obstruction occasioned by the prostatic enlargement.

The parts were removed after death, from a man, æt. 83, who died of uræmia.

(C. S. Wallace, 'Path. Soc. Trans.,' vol. lv, p. 262.)

**2224C.** A bladder with a greatly enlarged prostate. The bladder is hypertrophied and fasciculated from the obstruction due to the enlargement of the latter. The gland, which is uniformly enlarged and of spheroidal form, measures about four inches in diameter. It was, after death, completely enucleated by an operation carried out from within the bladder, as in the operation of prostatectomy. The isolated gland, which has a tuberos surface, is completely surrounded with a capsule, the presence of gland tissue in which (as told by microscopic examination) shows it to be, in part, an attenuated circumferential portion of the prostate.

The parts were taken after death from a man æt. 81, who was admitted in November, 1903, suffering from retention of urine. The patient was extremely ill, and nothing was done beyond giving him relief by a supra-pubic opening. Death followed in a few hours.

At the autopsy there was found intense hæmorrhagic cystitis and double hydronephrosis.

(C. S. Wallace, 'Path. Soc. Trans.,' vol. lv, p. 278.)

**2229C.** A prostate which was removed by operation. The gland is enlarged in all its parts, the third or median lobe somewhat disproportionately to the lateral. Its exterior is lowly lobulated, but in places thinly invested with a "capsule." During its removal the enlarged gland has been parted in front of the urethra.

From a man æt. 69, admitted under Mr. Clutton, October, 1903. Frequency of micturition had been noticed for some years, the use of

the catheter being eventually required every few minutes. The bladder was washed out, and some improvement took place, the catheter being used every five hours.

Supra-pubic cystotomy and enucleation of the prostate were carried out November 2nd, 1903. Recovery was complete. Micturition was afterwards naturally established, with normal intervals.

- 2229D.** A slightly enlarged prostate which was removed by operation. Over the gland tissue there is a "capsule" formed chiefly of circularly-disposed, unstriped muscle-fibres, and which represents the outermost part of the gland. The glandular tissue is in places minutely cystic. A piece of blue glass has been placed in the urethra. Shreds of the mucosa of the membranous portion of the urethra have been torn away in the removal of the gland.

The parts were removed from a man (L. C—) æt. 65, admitted into the Hospital with a dribbling retention.

(C. S. Wallace, 'Trans. Path. Soc.,' vol. lv.)

- 2229E.** An enlarged prostate which was removed by operation. The course of the urethral canal is marked with a glass rod.

From a man (C. K—) 75 years of age, admitted into the Hospital under the care of Mr. C. S. Wallace, October, 1903.

Six years previously frequency of micturition was noticed; three years ago an attack of retention occurred, which remained permanent, so that the patient became entirely dependent on the catheter. The urine was faintly acid. Supra-pubic prostatectomy was performed October 17th, 1903; supra-pubic drainage was practised. On October 26th hæmorrhage took place to the extent of about a pint.

The wound had healed by November 20th, and micturition was then spontaneous.

December 16th. Micturition every four hours in the day, and twice during the night; no residual urine.

February, 1904. Micturition by this date was perfectly normal, and had remained so when the patient was seen in January, 1905.

- 2229F.** The posterior or vesical half of a much enlarged prostate, the organ measuring two and three quarters of an inch in transverse diameter. The urethra has been converted into a deep slit-like channel. The divided surface is parted out by the stroma of the gland into a series of closely-set spheroidal masses of various size, which present an almost uniformly,

finely, spongy texture. In places the tissue is minutely cystic, but the volume of glandular substance present proves that the enlargement is not attributable to a mere retention of glandular tissue by retained products. The mass is, for the most part, surrounded with a "capsule" constituted by the compressed and displaced outermost parts of the gland.

The prostate was removed by operation from a man (J. M—) æt. 77, who had suffered from complete retention for six years. The intra-vesical projection of the enlarged gland was circular, or of an "os uteri" form. The prostatic urethra is intact within the swelling. Recovery was complete, the patient being able to micturate quite normally afterwards.

(C. S. Wallace, 'Trans. Path. Soc.,' vol. lv.)

**2229G.** The posterior portion of a prostate slightly enlarged. In the divided surface the glandular, *i. e.* the epithelial tissue is recognisable by its greater opacity. This opacity is at spots particularly marked from epithelial proliferation. A certain number of minute pigmented calculi are distributed through the section.

The specimen was taken after death from a man (J. K—) æt. 68, who died of a ruptured gall-bladder (February, 1904).

**2229H.** The anterior half of a slightly enlarged prostate, the gland being removed after death. On either side of the urethra are two growing foci of tissue, not as yet very sharply defined from the rest of the gland. In the glandular tissue around are many dark brown prostatic calculi.

From a man (E. S—) æt. 63, who died with a duodenal ulcer. There was no history of prostatic trouble.

(C. S. Wallace, 'Trans. Path. Soc.,' vol. lv.)

**2229A.** A collection of somewhat pyramidal, facettèd calculi, the largest of which measures about half an inch in extreme diameter. Chemically they consist chiefly of calcium phosphate with a small amount of ammonio-magnesium phosphate; they contain no uric acid. The calculi were removed from a pouch connected with the female urethra.

E. C—, *set.* 52, admitted under the care of Dr. Tate, May 1st, 1906. For twelve months the patient had been subject to pain and frequency in micturition, the pain being chiefly referred to the vulva, but also down the right leg. When in the upright position a very tender egg-shaped swelling had lately protruded from the vulva.

On May 4th the urethral diverticulum was opened; it contained a small quantity of urinous fluid, and in all twenty calculi. It communicated with the urethra about midway between the external meatus and the bladder. The interior of the sac was swabbed with phenol and plugged with iodoform gauze; it rapidly closed up.

**2277A.** A prepuce and adjoining portion of the integument of the penis much thickened and mamillated on the surface from the overgrowth of tissue due to lymphatic obstruction.

The part was removed (together with some warty vesicular masses on the scrotum) from a man *set.* 21, admitted under the care of Mr. Clutton, July, 1903. There was no history of syphilis or gonorrhoea. An inflamed gland in the right groin had been incised ten years previously. Since that date the skin of the penis and scrotum progressively thickened. The wound in the groin soon healed. For the last two months there had been a discharge of clear fluid from vesicles on the affected parts—lymphorrhoea. When admitted the left leg was found to be slightly larger than the right.

The patient was readmitted in February, 1904. The penis had become larger than it was before the operation, and warty masses had reappeared on the scrotum. An enlarged inguinal gland was excised; a discharge of lymph ensued from the wound, which only ceased in about three weeks. The patient left the hospital a few weeks later.

**2284C.** A vertical section of the anterior portion of a penis. The prepuce is greatly thickened by the growth of a squamous-celled carcinoma, which has arisen from the inner, mucosal aspect, and in places has infiltrated the skin, through which it has ulcerated. The tumour has a coarsely, warty, or rugged surface; it has commenced to invade the substance of the penis in the neighbourhood of the corona.

From a man *set.* 50, admitted under the care of Mr. Pitts, January, 1904. Four weeks previously he noticed a small nodule beneath the prepuce. When admitted the meatus was found surrounded by an ulcerating new growth. Small glands were palpable in both groins. The prepuce was slit up and the glans exposed. Amputation was carried out, with a dorsal flap of skin. Suppuration took place, and orchitis followed, but the wound had satisfactorily healed by February 28th, and the patient was discharged.

He was readmitted on April 5th with what appeared to be local



recurrence in the stump, and hard masses in both groins. On April 7th a further amputation was performed. Erysipelas appeared, and death took place on May 7th.

At the autopsy multiple small abscesses were found in the lungs, liver, and kidney; the spleen was large and diffuent; there was endocarditis of the tricuspid valve. No secondary growths were found in the viscera.

**2311A.** A complex, thin-walled, cystic tumour which was removed from the spermatic cord of an adult. It is somewhat heart-shaped, with the apex downwards, and measures in the vertical diameter 10.5 cm., in its chief transverse diameter about 6.5 cm., and in its greatest circumference, taken in a slightly oblique direction, 18 cm.: whilst in the body the long axis corresponded with that of the spermatic cord. The centre of the swelling lay midway between the two abdominal rings. Exteriously the tumour is smooth and glistening except where covered with the connective tissue derived from the spermatic cord, the sheath of which was divided in its removal. The cyst consists of two main cavities the higher of which measures about 5 cm. in diameter, and was continuous with the intra-abdominal extension of the mass mentioned below in the account of the operation. The lower of the two main cysts, which in the body lay partly to the left of the other, measures 9 cm. Although the lower, chief cavity is single it presents many falciform processes, the presence of which suggests that it may have arisen from the fusion of a series of lesser cysts. In addition to the two main cavities there are shown three processes of more compact structure which have been marked with pieces of blue glass. One of these, projecting partly into the upper of the two main cysts, is broadly attached to the septum that separates them. A second, of crescentic form and about 5 cm. in length, is attached partly to the septum mentioned, whence it extends beneath the roof of the lower cyst. The third projects into the lowest loculus of the same cyst. These more solid masses, as seen in section, are constructed of a compact series of small alveoli, the largest of which is about .5 cm. in diameter. Microscopic preparations of these more solid parts reveal a congeries of sharply-defined spaces lying in a scanty, loose connective tissue, and lined with a distinct flat endothelium. The shape of these spaces is very various, some being circular, others oval or flattened. There is nowhere any

indication of a columnar or cubical epithelial lining even in the smallest, which are altogether microscopic. The fluid in the chief cyst was clear, that from the more solid portion of the growth in the higher cyst was slightly milky.

W. R. W—, *et. 41*, admitted under the care of Mr. Wallace, April, 1904. Five years previously he had noticed a swelling above the right testis, which had gradually increased in size. For some time after its appearance it "would go back," but had become irreducible for the last two years. A fortnight before admission the patient had lifted some heavy furniture, which act had caused some pain in the mass and an increase in its size. There had been several attacks of abdominal pain and vomiting, the last one of which was so severe as to suggest to his medical attendant the possibility of obstructed hernia.

On examination, a swelling the size and shape of a large pear was found to occupy the upper part of the scrotum and adjacent part of the inguinal canal. It was irreducible; there was no impulse on coughing. It was nodular, and elastic in consistence. Translucency was not obtained. Rectal and abdominal examination showed the presence of a mass occupying the right fossa and the right posterior quadrant of the pelvis. The nature of the tumour was obscure, but the physical properties of the scrotal and inguinal portions suggested an irreducible inguinal hernia, although the presence of the abdominal portions, and certain details of the history, were not consistent with this view.

*Operation.*—An incision showed the tumour to occupy the upper part of the scrotum, immediately above the testis, from which it was quite distinct. Traced upwards, it was found to enter the inguinal canal. This was therefore slit up and the spermatic cord exposed in its full length. The mass was then seen to lie within, and to be covered by the cremaster muscle and fascia. When the latter was divided the tumour was seen to enter the abdomen through the internal ring. The structures of the cord were spread out over the swelling, so that its separation was a matter of some difficulty. Near the internal ring the adhesion of the mass to the surrounding tissues was very intimate, and several small cysts, about .5 cm. in diameter, became detached from the main mass. Traction on the tumour showed that it was continuous with that felt in the abdomen, from which it could only be separated with the knife. While this was being carried out the appendix appeared, and adhering to it were seen many small cysts similar to those just described. The appendix was removed and a finger introduced into the abdomen. A careful search made it plain that the intra-abdominal mass was composed of a series of small cysts which were but loosely connected. The fact that several of these small cysts were adherent to the appendix seemed to point to an intra-abdominal site for the mass; but if this

was the case there must have been extensive adhesions, for no intestines protruded or were seen.

(C. S. Wallace, 'Clinical Society's Transactions,' vol. xxxix, p. 157.)

- 2314A.** The testicle of a fully-grown, normal sheep of the Herdwick variety, in which the male is furnished with long recurved horns, of which the ewe is quite destitute.

Presented by S. G. Shattock, Esq., and Dr. C. G. Seligmann.

- 2314B.** The right testicle of a sheep of the Herdwick variety, in which the male is furnished with long recurved horns, of which the female is quite destitute. The vas deferens was tied in two places a short way above the testicle and divided, when the animal was a lamb, the operation being carried out on both sides. A piece of red glass rod has been run beneath the upper segment of the vas, the occluded end of which has been shown by dissection. The animal was killed about fourteen months later. The testicle has grown to its full size, and histologically shows the pictures typical of active spermatogenesis. The horns attained the normal length. The vesiculæ seminales and Cowper's glands grew to the full size. In the sheep the prostate lies concealed near the neck of the bladder between the urethral mucosa and the thick muscular wall of the canal, and is not adapted for the study of the results ensuing after operations upon the testicle.

(S. G. Shattock and C. G. Seligmann, 'Proceedings of the Royal Society,' vol. lxxiii; and 'Trans. Path. Soc.,' vol. lvi.)

Presented by S. G. Shattock, Esq., and Dr. C. G. Seligmann.

- 2314C.** One of the testicles of a Southdown sheep in which, when a lamb, each vas deferens was ligatured in two places, and cut across between the ligatures. The experiment was carried out March 3rd, 1902; the animal died October, 1903, nineteen months later. Its potency was not interfered with. After death a glairy fluid was found in the vesiculæ seminales, but no spermatozoa. Both testicles, after the vasotomy, grew to the full size. Examination of the material retained in the dilated end of the vas of the opposite testicle, revealed the presence of spermatozoa, and microscopic sections of the body of the testicle preserved in the preparation, showed active spermatogenesis proceeding in the tubuli. A piece of bristle has been

placed above the occluded distal segment of the vas deferens. The vesiculæ seminales and Cowper's glands attained their full size, a result in marked contrast with that following double castration when carried out in the lamb.

Presented by S. G. Shattock, Esq., and Dr. C. G. Seligmann.

- 2314D.** The testicle of a dog in which, when sexually mature, the vas deferens was divided between two ligatures. The organ has grown to its full dimensions. The vas on the distal side of the ligature, as it runs downwards by the side of the epididymis to the globus minor, is abnormally distended with accumulated semen. The experiment was carried out in December, 1901, the vas on each side being similarly ligatured and divided; the animal was killed in November, 1902. Each testicle grew to the full size, and microscopic examination showed spermatogenesis in active progress. The prostate was both histologically and macroscopically normal. Sexual desire was not destroyed by the operation.

Presented by C. S. Wallace, Esq.

- 2314E.** The testicle of a sheep on which vasectomy was carried out on both sides when the animal was a lamb. One of the testicles grew to the full size; the other, preserved in the specimen, underwent a marked degree of atrophy. The chief structure shown in the preparation is the epididymis; lying in the concavity of this is the body of the testicle of which a vertical section has been made, and which is hardly larger than a haricot bean. The atrophy is to be ascribed to some unintentional interference with the vascular supply, arising probably from thrombosis.

(S. G. Shattock and C. G. Seligmann, 'Trans. Path. Soc.,' vol. lvi.)

Presented by S. G. Shattock, Esq., and Dr. C. G. Seligmann.

- 2316A.** A right testicle with portion of the spermatic cord, removed for the strangulation arising from twist or rotation. The tissue about the epididymis and lower part of the cord is much swollen and discoloured from congestion and extravasation; the substance of the testicle, as seen through the tunica albuginea, appears of a violet or plum colour from a similar cause. The swelling ceases quite abruptly, the cord beyond (in which the vas deferens is shown by dissection) presenting no signs of

disease. At the operation the cord was found twisted three times.

W. B—, æt. 26, admitted under the care of Mr. Battle, May 22nd, 1902. Eight years previously the patient had experienced sudden pain in the right testicle without any discernible cause; there was no swelling. The pain was relieved by the application of ice. Since that date recurrences of pain had occasionally recurred. He had never worn a truss. Two days before admission an onset of pain took place, with swelling of the testicle. Taxis was resorted to by a practitioner and the pain disappeared. Twelve hours later the organ swelled rapidly and became painful. Vomiting followed.

On admission a tender, inflamed, fluctuating, irreducible swelling was found in the right inguinal region. At the operation blood-stained fluid was found in the tunica vaginalis, the walls of which were abnormally thick; the testicle was greyish-black and gangrenous. The cord was twice twisted, and the testicle lay close to the external ring. There was marked œdema of the tissues around the tunica vaginalis.

**2344A.** A large oval tumour, six and a half by three and three quarter inches in its chief diameters, which grew in connection with a retained testicle. The growth is extremely soft and incompletely parted out into lobules of various sizes by septa of connective tissue continuous with the tunica albuginea. Except at the upper end of the specimen the tunica vaginalis has been cut away. A coarse plexus of flattened veins ramifies in the covering of the growth, which histologically is a round-celled sarcoma of alveolar type.

W. S—, æt. 31, admitted into the Great Northern Hospital, August, 1902, under the care of Mr. E. C. Stabb. The scrotum had always been very small. Two years previously the patient first observed a small swelling, the size of a walnut, in the *right* groin, which gradually increased, though more rapidly during the last three months, to its present size; the growth of the tumour was painless. On the *left* side, just beyond the external ring, was a small soft body, the size of a broad bean, representing the left testicle.

At the operation the tumour was found to lie on the aponeurosis of the external oblique, and was readily enucleated, except where attached to the spermatic cord, and at its lower and inner part, where it was connected with the scrotum by a plexus of large tortuous veins. The inguinal canal was laid open in order to allow of ligation of the cord as high as possible.

Presented by E. C. Stabb, Esq.

**2371A.** A teratomatous cyst of the right ovary, about four and a half inches in diameter. Into it, at one part, there projects

an irregular process of bone bearing teeth, and to the left of this a low eminence about half an inch in diameter covered with true skin. The tress of dark hair, which is now loose, was probably shed from the eminence referred to. The Fallopian tube is shown on the summit of the cyst.

A. S—, *æt.* 25, single, admitted under the care of Dr. Tate, April, 1902. In December, 1900, the patient was attacked with shivering, vomiting, and difficulty of micturition, and was obliged to keep her bed for six weeks. She suffered from two similar attacks since, the most severe being in January, 1902. Since then there had been a total inability to pass water, the catheter being used twice a day.

On admission a fluctuating swelling was found, reaching half way to the umbilicus, displacing the uterus forwards, and impacted in the pelvis.

At the operation, April, 1902, the bladder was found high up and greatly enlarged. The ovarian cyst was removed. Recovery was uninterrupted.

- 2377C.** Half of a large fibro-muscular tumour of the ovary, about six inches in its longer diameter. On the upper part of the specimen there remains part of the Fallopian tubes and mesosalpinx, and at this spot a "capsule" has been raised for a short distance from the tumour, the capsule being constituted by the remains of the ovary displaced over the new growth, and beyond this by the tunica albuginea only.

The tumour was removed by Dr. Tate from a woman *æt.* 50. The external genitals were undeveloped, there was no vaginal canal, and menstruation had never occurred. The tumour had been noticed for five years, and had been increasing in size more markedly for a year or so before the patient came under observation.

On examination a hard, smooth tumour was felt reaching upwards half way between the umbilicus and pubes.

At the operation the tumour was found impacted in the pelvis, the impaction having led to incontinence of urine for some months. The growth was attached by a pedicle to the right uterine appendages; the uterus was represented by a cord the thickness of the little finger. Recovery was uninterrupted.

(Dr. J. S. Fairbairn, '*Trans. Obstet. Soc.*,' vol. xlv, 1903, p. 186.)

- 2384A.** A left Fallopian tube greatly dilated in a hydrosalpinx, so as to measure six and a half inches in length. The dilatation is most extreme towards the distal end, and diminishes notably in the region where the tube has been tied and disconnected

from the uterus. The walls of the distended tube are thin and translucent, the contents watery and clear.

A. H—, *æt.* 47, married, childless, admitted under Dr. Tate, February, 1903, with a history of attacks of abdominal pain extending over two months.

Recovery was uninterrupted.

**2399B.** A large tubo-ovarian cyst about five and a half inches in larger diameter. A piece of whale-bone has been passed into the divided end of the Fallopian tube, and into the slit-like aperture by which it opens into the cyst. It will be noticed that the summit of the cyst is somewhat constricted off from the rest, this portion, possibly, representing the terminal part of the tube itself greatly dilated and merged into the proper cyst of the ovary.

From a woman, *æt.* 40, married, admitted July 16th, 1904, under the care of Dr. Tate. There had been one pregnancy sixteen years previously, a seven months' child being still-born. The periods had been irregular and painful for the last year.

For the past six months the patient had suffered from bearing down, and a yellow intermenstrual discharge, and latterly from some difficulty in micturition. Some enlargement of the abdomen had been noticed.

The uterine appendages of both sides were removed on July 23rd; on the left side there was an inflamed ovarian cyst; on the right, the tubo-ovarian cyst shown in the preparation. Recovery was uneventful.

**2422A.** A uterus which was removed by operation. In the substance of the cervix there is a smooth-walled cyst about an inch and a quarter in diameter. The mucosa of the cervical canal is thin and translucent where it covers the cyst, which projects from the left and posterior aspect. In the uterine wall there have grown a certain number of fibro-miomata, of which the chief is about two inches in diameter.

From a lady, *æt.* 45. The catamenia were regular, and not excessive. For five months considerable pain accompanied the periods; frequency of micturition was also complained of.

On examination a hard rounded swelling was found in the posterior part of the pelvis, displacing the uterus forwards. As there was some doubt whether the disease was a malignant growth of the ovary or a uterine tumour, laparotomy was performed on December 11th, 1903, and the uterus removed. The contents of the cyst were quite viscid,

the cyst itself being probably one of retention rather than one arising in Gartner's duct.

Presented by Dr. W. W. H. Tate.

- 2461B.** The labia minora and prepuce of the clitoris, with parts of the labia majora, removed by operation. Each labium minus is the seat of chronic ulceration, which on the left has been followed by a destructive growth which microscopic examination shows to be a squamous-celled carcinoma.

From a patient *æt.* 52, a widow, admitted under the care of Dr. Fairbairn, August, 1902.

The patient had been subject to pruritus vulvæ for twenty years; this had been considerably worse during the last three years. A small warty growth had been noticed on the labium six weeks before admission.

Examination showed a good deal of superficial ulceration of both labia, and on the labium minus a small, tender, warty-looking growth; the latter was removed for microscopic examination, and proved to be a squamous-celled carcinoma.

Excision of both labia minora and of the glands in the left groin was successfully carried out, September, 1902.

- 2476C.** A left Fallopian tube greatly distended in a tubal pregnancy so as to measure four and a half inches in its longer axis. Through a wide longitudinal rent, which occurred during life, the fœtus has been extruded; it retains its connection with the placenta within the tube by means of the umbilical cord.

E. C—, *æt.* 35, admitted under the care of Dr. Fairbairn.

There was a history of five previous pregnancies. An apparently normal period occurred during the first week of June, 1903. Slight vaginal hæmorrhage commenced a week later, and persisted daily till admission in September, 1903. Severe abdominal pain occurred in July, 1903, and the patient was in bed for a month.

On examination after admission in September an abdominal swelling was discovered, firm, smooth, reaching to within half an inch of the umbilicus; it was closely united to the uterus, and moved with it.

Operation was carried out September 17th, the sac of a hæmatocoele, with its contained fœtus, being removed, together with the ruptured Fallopian tube. Recovery was uninterrupted.

- 2476D.** A lithopædion, about three inches in chief diameter, together with portion of the broad ligament and Fallopian tube, the divided uterine extremity of the latter being marked



with a rod of white glass. In the neighbourhood of the spot last referred to, certain of the long bones are distinctly recognisable. The specimen may be viewed as one of tubal abortion accompanied with rupture of the tube, and the subsequent escape, encapsulation, and partial calcification of the coverings of the extruded foetus.

The parts were removed from a married woman *æt.* 46. She was delivered of a still-born child twenty-two years ago. Sixteen years ago, after missing two periods, the patient was suddenly seized with severe pain in the right side of the abdomen. She kept her bed for a few days, but on getting up she had to return to it, owing to severe hæmorrhage from the vagina, and abdominal pain. She was, after this, in bed off and on for two years, on account of attacks of pain.

In August, 1901, she was seized with a sudden attack of severe pain in the left iliac region, the pain continuing until the date of her admission to the Hospital, December 28th, 1901.

On examination the uterus was found anteflexed and tilted to the right; a hard craggy swelling was felt on the left side between the uterus and pelvic wall.

Abdominal section was performed January 2nd, 1902. The mass removed was surrounded by adhesions; and, although attached to the right uterine appendages, it had become twisted over in front of the uterus, so as to lie on the opposite side.

(Dr. W. Tate, 'Obstet. Soc. Trans.,' vol. xlv, p. 95.)

- 2499B.** A pregnant uterus with the contained foetus, removed during life for the obstruction caused by the growth of a large intramural fibromyoma in its posterior wall. The appendages (with the exception of the right ovary) have been removed with the uterus. The uterine cavity is misshapen from the
- tumour, but the foetus has not as yet undergone any compression. The divided cervix may be recognised at the back of the preparation.

From a woman, *æt.* 42, admitted under the care of Dr. Tate, April 27th, 1903.

Her periods had been regular until December, 1902. In January some trouble with micturition was first experienced, and this had continued since. The patient had latterly suffered from a good deal of abdominal pain, and had noticed some enlargement of the abdomen.

On examination a large mass was discovered reaching to the umbilicus; this was felt to contract and relax, and was evidently the pregnant uterus. The cervix was high up behind the pubes. Behind the cervix, and filling the pelvis, there was a hard tumour the size of

a foetal head. The bladder was drawn upwards into the abdomen, and to the right of the middle line.

On April 30th the parts were removed by supra-vaginal hysterectomy. The right ovary was left *in situ*.

Recovery was uneventful.

**2512E.** Portion of a breast together with the nipple; beneath the latter is a well-defined cavity lined with granulation tissue, probably a suppurating cyst in one of the ducts. Microscopic examination showed nothing suggestive of tuberculosis.

From a woman, *æt.* 43, under the care of Mr. H. B. Robinson.

The patient had had four children, of whom the youngest was fourteen years of age.

She noticed pain in the right breast in September, 1902. The nipple, which before was abnormally retracted, became more so. A discharge was noticed early in December, at times thin, and at times thick and puriform.

The part was excised in January, 1903.

**2526B.** A vertical section of a fungating spheroidal-celled carcinoma of the soft or encephaloid type, which has grown in connection with the breast. The growth is about two and a quarter inches in diameter, and opaque from the large amount of epithelium entering into its construction. In the superjacent skin there is an almost circular aperture about an inch and a half in diameter, through which the sloughing surface of the growth is exposed.

From a woman (L. C—), *æt.* 66, who first noticed a pea-like swelling in the breast ten months before admission; two months before admission the skin over the swelling became red, and a month later gave way.

The axillary glands, some of which were felt to be enlarged, were removed with the breast.

The case was under the care of Mr. Pitts, February, 1903.

**2535A.** An enlarged breast which was removed from a negro. The gland measures about two and a half inches in diameter, and nearly one and a quarter in extreme thickness. Microscopic examination shows the chief tissue present to be densely fibrous, but the number of acini distributed through it corresponds fairly with the normal, and the condition may therefore be classed as hypertrophic. In a few spots there is evidence of interstitial inflammation, and the epithelium is abnormally proliferating.

The breast was excised, with its fellow, which was equally enlarged, from a negro of Western Kordofan. The patient was between fifteen and sixteen years of age. He stated that his sexual powers were complete, and that the breasts used to swell under sexual excitement.

Presented by A. Webb Jones, Esq.

**2579A.** Half of a cancellous osteoma of flattened cuboidal form which was removed from the front of the knee-joint. The tumour, which measures an inch and three quarters vertically and two inches and an eighth in transverse diameter lay behind the ligamentum patellæ, which was somewhat flattened, and occupied the shallow groove on its anterior surface (now on the right-hand side of the specimen). The growth is anteriorly lowly lobulated, and is here constructed of cartilage which, as shown in the section, is continued over the upper and lower borders. The proper upper edge lay in contact but discontinuous with the lower margin of the patella, which, as told by a skiagram, was flatter than natural. The knee-joint itself presented nothing abnormal in the skiagraphic picture.

The patient was a gentleman, 60 years of age, who had enjoyed good health. Nine years ago he slipped whilst hurrying up the stairs, and fell on his right knee. For three or four days afterwards the knee was painful, but he was not compelled to rest. Ever since then he has had more or less pain, relieved to some extent by linaments.

Five years ago the patient observed some change in shape of the joint; the "knee-cap seemed to be increasing in size." The pain and deformity progressed.

On examination the joint could be fully extended, but could not be flexed beyond a right angle. A large bone-like mass lay below the patella; there was movement between the two on flexion and extension of the knee; and the mass seemed to be slightly movable on the tibia.

Operation: a large horse-shoe incision was made from the level of the joint on either side, reaching below to the tibial tubercle. The flap was turned up and the ligamentum patellæ exposed; the latter was spread out over the tumour. The fibres of the tendon were separated to the inner side of the mid-line, the mass exposed, seized with lion forceps, and forced out of its bed. The knee-joint was not opened, and the wound healed by first intention.

The case was under the care of Mr. J. P. Hedley, in St. Thomas's Home.

- 2580E.** Half of a composite odontoma removed by operation from the temporal bone of a colt. As displayed by the section it consists of dentine in which are distributed complex involutions of enamel which is traceable to the free surface at the expanded end of the tumour.

(J. Bland-Sutton, 'Trans. of the Odontological Society of Great Britain,' vol. xxxvi, 1903, p. 10.)

Presented by E. R. Harding, Esq.

- 2588B.** A slice taken from a deep-seated nævus of the thigh. The section of the growth, which is ill-defined in the fat in which the tumour has grown, displays a cavernous structure in some of the spaces of which the blood still remains.

From a male *æt.* 23, who presented a swelling in the adductor region of the left thigh, which was thought to be a deeply seated, intermuscular lipoma.

At the operation the tumour was found to lie under the deep fascia between the adductors longus and brevis. The hæmorrhage was not excessive. Recovery was uneventful.

F. C. Abbott, Esq., St. Thomas's Home.

- 2604A.** A slice from a very extensive, pigmented, congenital papilloma or "mole" which was removed from the thigh of a girl eighteen years of age. It covered the thigh almost from the groin to the knee, involving the whole of its anterior surface and a considerable area of each of the lateral aspects.

From a patient admitted under the care of Mr. E. M. Corner, October, 1902. The area left after the removal was successfully grafted over at a later date.

- 2614D.** A right pinna, the skin on the concave aspect of which is the seat of malignant ulceration due to the growth of a squamous-celled carcinoma.

From a man *æt.* 71, in whom the disease commenced as a "pimple" on the antihelix eighteen months previously. For fourteen months the disease was treated by means of the X rays, but progressed in spite of the treatment. The part was eventually removed by operation.

Presented by C. A. Ballance, Esq.

- 2614E.** A vertical section of the lower part of a thigh. The femur is much enlarged and sclerosed from previous inflammation which was associated with necrosis, sequestra having come

away, and sinuses having been frequently scraped during the fifteen years before amputation. In connection with the persisting sinus a squamous-celled carcinoma has grown. The neoplasm projects but little from the cutaneous edge of the sinus, where it has a warty surface, but is of deep extent, invading the soft tissues and the substance of the sclerosed bone for a considerable depth, scattered points marking sections of lines of extension being recognisable almost as far as the deep or posterior limit of the bone. At the back of the specimen is shown a second, lowly-lobulated, and warty growth of the same kind, which has formed in connection with a second sinus; the scar of a previous incision is recognisable beyond the carcinomatous sinus itself.

The limb was amputated from a man *æt.* 49, admitted under the care of Mr. Clutton, November, 1903. There was a history of necrosis of the femur extending back thirty-three years, with four discharging sinuses arising from the popliteal portion of the femur.

Microscopic examination of portion of the tissue around one of the sinuses having shown it to be carcinomatous, amputation was performed through the middle third of the femur. The medullary end of the femur, in the plane of division, was filled with new bone. Enlarged inguinal glands were removed, but histologically these showed only the changes due to adenitis. The patient was discharged January, 1904.

**2620C.** Portion of small intestine in connection with the mucous membrane of which a large tumour has grown. The growth completely surrounds the bowel, the coats of which it has so invaded as in many places to render them untraceable. A piece of glass has been passed through the constricted lumen. Histologically the new growth is a columnar-celled carcinoma.

**2625Aa.** The urinary bladder of a male foetus at term, together with the left kidney. The kidney has two ureters which open side by side in the bladder; the openings are marked with black bristles. On the right side the ureter is single.

**2627A.** The skulls of a two-headed lamb. That of one head is smaller than the other, and wants the lower jaw (*Agnathia*); the absence of lower jaw is associated with an incurvation of the teeth and dental arch.

Presented by E. H. Holding, Esq.

**2631A.** A malformed duckling. Appended to the lower part of the trunk in the region of the pelvis is a pair of somewhat diminutive supernumerary limbs. A piece of white glass has been placed in the cloacal opening.

**2659D.** Portion of the spinal column of an infant. In the lumbar region on the right side of the middle line there is a wide defect in the vertebral canal due to an absence of development in the laminae of the vertebrae on the right side; through this there projects part of the neck of the sac of a large spina bifida, which protruded *forwards* so as to produce an abdominal swelling, which was diagnosed as an ovarian cyst.

From a female child *æ*t. 11 months, admitted into St. Thomas's Hospital under the care of Mr. H. B. Robinson, January, 1903. There was left talipes equino-varus.

Soon after birth the abdomen was noticed to be fuller than natural, especially on the right side; but it had become much larger during the last two months. On examination it was evident that there was an encysted collection of fluid in the right side of the abdomen. Hydronephrosis was excluded by the fact that the fingers could be got down between the costal margin and the cyst. On bimanual examination of the pelvis the swelling could be traced downwards to the pelvic brim. The diagnosis of parovarian cyst suggested itself.

The abdomen was opened January 26th; a bluish-coloured cyst presented itself and was tapped. On attempting to draw out the cyst after its collapse, this was found to be impossible owing to its intimate attachment to the right side of the spine, just below the transverse meso-colon. The index finger introduced inside the cyst went into a hole in the side of the spinal column. The cyst was ligatured close to the spine and cut away; the abdominal wall was then sutured in layers. Death occurred ten days after the operation.

(H. B. Robinson, 'Clinical Soc. Trans.,' vol. xxxvi, p. 200.)

**2752D.** The hinder part of a rabbit which died of tetanus set up by the introduction beneath the skin of the back of a small quantity of garden soil. The site of inoculation, which was sutured after the introduction of the soil, is but little altered.

Presented by S. G. Shattock, Esq.

**2755A.** Portion of the lower part of the left leg of a woman, sixty-five years of age. On the inner, subcutaneous aspect there is a large chronic ulcer about three inches and a quarter in the

larger vertical axis. The edges are abrupt, thickened, and callous, and present scarcely any trace of the shelving which indicates a process of healing. The granulation tissue forming its base is abnormally pale. As seen at the back of the preparation, the muscles are almost entirely replaced by fat, indicating long disuse of the limb.

Amputation was performed for the disease shown. The patient, E. F—, æt. 65, was admitted October 23rd, 1903, and the limb removed by Mr. J. E. Adams. She had had six children, all of whom were healthy, and had suffered from varicose veins in both legs for nine years.

About eight years ago she struck her left leg against an iron bedstead, and had had an ulcer since. The ulceration had slowly caused contraction of the tendo achillis, and the foot had acquired the position of equino-varus. The ankle-joint was practically fixed. There was a second circular ulcer, about an inch and a half in diameter, on the outer side of the leg.

The patient was discharged cured on November 26th, 1906.

**2758B.** The left hand of an infant, eleven days old, enormously swollen from cedema. A short distance above the wrist it is so extremely constricted as to measure only three-eighths of an inch in diameter, the condition shown having been probably due to the inclusion of the part in an amniotic band.

The hand was removed by amputation on the fifth day after birth, by cutting through the tendons.

The fourth and fifth digits of the other, the right, hand were abnormally small.

The fourth and fifth toes of the left foot were absent. The child was the third, the other two being quite healthy. There was nothing abnormal either in the pregnancy or labour.





## JOHN CROFT.

---

ON the 21st of November, 1906, passed away Mr. John Croft, after an illness at the last of a few days' duration. For several years previously his health had been indifferent from cardiac irregularity and marked failure of eyesight. From the thin list of surgeons who have run their race at the Hospital another link has been broken.

Mr. John Croft was the son of Hugh and Maria Croft, and was born near Newhaven, in Sussex, in 1833; he was the grandson of Gilmore Croft, who was a successful practitioner in the City, and later removed to Hastings. His father came to London, and lived at Lower Clapton, and the son received most of his early education at the Hackney Church of England Grammar School.

In 1850 Mr. Croft entered as a student at St. Thomas's, attending Mr. Le Gros Clark's lectures on anatomy. During the same time he gained a knowledge of materia medica and pharmacy by going daily to Messrs. Shuttlesworth's, the druggists, in Leadenhall Street. In 1852 he was appointed dresser to Mr. Le Gros Clark, and established the close friendship that afterwards existed between them. This was followed by an apprenticeship with Mr. Thomas Evans, of Burwash, in Sussex. In the latter part of 1854 he obtained the Diplomas of Membership of the Royal College of Surgeons and Licentiate of the Society of Apothecaries, and at the beginning of 1855 he was elected House Surgeon to St. Thomas's for six months; at the expiry of this office he became Assistant Surgeon to the Seaman's Hospital Ship

"Dreadnought." In 1859 he passed the examination for the Fellowship of the Royal College of Surgeons.

In 1860 he left the "Dreadnought" and returned to his old hospital as Assistant Demonstrator of Anatomy and Surgical Registrar; he was also elected Surgeon to the Surrey Dispensary, a post in those days offering good facilities for gaining experience. Upon his appointment as Resident Assistant Surgeon in December, 1863, he resigned the last two posts. This office was held under different conditions to those existing at the present time; the length of tenure was not limited and the members of the Surgical Staff living a greater distance from the Hospital allowed a freer hand to the younger man. This prolonged period of residence at the temporary hospital at the Surrey Gardens gave him a large experience, which resulted in his appointment as Assistant Surgeon on January 1st, 1871. Fortune then smiled on him, for six months later he was promoted to be Surgeon on the opening of the new Hospital on the Albert Embankment. With the reorganisation of the Medical School at this time he resigned the Demonstratorship of Anatomy and became Lecturer on Practical Surgery. In 1881 he vacated this to become Special Lecturer on Clinical Surgery, which post he held up to the date of expiry of his surgeoncy in July, 1891. Many of his old pupils will recall the efforts to make these lectures really clinical, the subjects in the main dealt with being those chiefly in which he took an especial interest, such as diseases of the hip and other joints, diseases of the urethra, etc. On retiring he was elected Consulting Surgeon to and a Governor of the Hospital. With the work of the Nightingale Home for Nurses he was closely associated, and for many years acted as one of their lecturers.

Outside St. Thomas's Mr. Croft acted as Surgeon to the National Truss Society and the Magdalen Hospital at Streatham, he was also Consulting Surgeon to the Royal Kent Dispensary, Kensington Dispensary, Miller Memorial Hospital, and the Hounslow Cottage Hospital. For many years he was Surgeon to the National Provident Assurance Society, only resigning this within a few years, when his health began to fail.

At the Royal College of Surgeons he had been a Member of the Council, a Vice-President, and a Member of the Court of Examiners. He had also acted as Examiner in Surgery at the Royal College of Physicians and in the University of Durham.

When the British Medical Association met at Nottingham in 1892 Mr. Croft was president of the Surgical section.

Among his many contributions to surgical literature the papers in the '*Lancet*,' 1878, and '*Med.-Chir. Trans.*,' 1881, on the immediate treatment of fractures of the leg by plaster-of-Paris splints, perhaps stand first. Croft's splints are universally known, and their introduction effected a most radical progress in dealing with these injuries. Although a too conservative spirit at many hospitals failed for some time to appreciate the great gain by this method over the old wooden splints in the efficient fixation of fractures, at the present "plaster" is almost generally adopted. A subject in which he was deeply interested was disease of the hip-joint; he advocated early excision, publishing a paper based on the results of forty-seven cases in the '*Trans. Clin. Soc.*,' 1880. There was considerable controversy regarding its general employment, and Mr. Croft, convinced of its value, was always ready to uphold his views in a discussion. Although at the present date a more conservative treatment might appeal to the majority, it must be remembered that then free drainage was demanded, and the result was a shortened convalescence, a reduced mortality, and many excellent cures at the expense of considerable shortening. A very important paper on rupture of the intestine without external wound, based on a successful case of resection, appears in the '*Trans. Clin. Soc.*,' vol. xxiii; this was one of the very first reported and appended to this contribution is an important analysis of all such recorded up to that date. The diagnosis and treatment of diseases of the urethra interested him greatly, and his old house surgeons and dressers will remember the well-laden bag of his urethral instruments which always had to be carried to the ward on his visiting days. He writes on "Internal Urethrotomy," in the '*St. Thomas's Hospital Reports*,' among many papers to be found there from his pen. Many

other papers are scattered through the 'Transactions' of the different medical societies.

Mr. Croft will be remembered as a man of singularly striking features. He was most courteous and dignified and had a stern sense of duty, which at times to the outsider might appear almost exacting. To those who knew him intimately he was a most genial, kindly man. The writer, who had the privilege of his close friendship for several years, can recall what pleasure it gave Mr. Croft to hear about the progress of modern surgery at the hospital and to make comparison with the past. To the end the interests and doings of St. Thomas's were always uppermost, and among the visits of his many medical friends those of his old colleagues were certainly not valued the least. A man of strong religious convictions, he was always ready to ally himself with those working to remedy some social defect and to produce a higher ideal.

As an operator he was steady and careful, but perhaps lacked the dash which one would have expected him to have inherited from his teachers of the pre-anæsthetic days. With his own subjects he was very good and could deal particularly deftly with a stricture of the urethra by internal urethrotomy. A convert to Listerian methods he employed the full technique considerably longer than most surgeons.

Convinced of the value of healthy exercise, Mr. Croft was for many years an enthusiastic golfer and could generally be seen at Wimbledon on a Saturday until cardiac irregularity and defective eyesight stopped his favourite pursuit. In his day he was the only follower of the game among his colleagues on the Staff.

In 1864 he married Annie Douglas Douglas, the daughter of Alexander Douglas Douglas, Esq., who survives him, but he left no issue. Our sympathy is with her who shared his life for so many years, and who has made every interest for the good of the Hospital especially her own.

Mr. Croft was interred at Kensal Green Cemetery.

H. B. R.

**TABULAR STATEMENT**  
**OF**  
**GASTRO-ENTEROSTOMY AT ST. THOMAS'S**  
**HOSPITAL FOR THE YEARS 1891-1905,**  
**WITH REMARKS.**

---

By **CYRIL A. R. NITCH, M.S.LOND., F.R.C.S.,**  
**RESIDENT ASSISTANT SURGEON.**

---

THE tables contain a record of every case of gastro-intestinal anastomosis for the fifteen years ending 1905, and are headed by the first operation of this nature performed in the hospital. The details have been obtained from the notes, and in some cases have been amplified by the kind assistance of the Staff. All patients who left the hospital alive were written to in order to ascertain their condition at the present time, and the reply, when received, has been recorded in the "Remarks" column of the tables.

The series of cases has been worked out with a view to showing the actual results of operation as to mortality, secondary operations, and relief or cure. The method of computing operative mortality has been to call the case "fatal" when the cause of death could be reasonably ascribed to the operative procedure. Cases dying of pre-existing conditions, as phthisis, or of subsequent lesions, as

cerebral hæmorrhage, have not been classified as fatal under this heading. The general mortality from all causes is given separately.

The percentage of fatal cases at first sight appears abnormally high, but this is easily accounted for by the almost hopeless cases subjected to operation in early years, together with the lack of stringent asepsis and improved technique which now prevails.

For the purpose of simplicity the cases have been divided into two classes—malignant and benign—and each case bears a distinctive number, which is adhered to throughout.

The total number of cases operated upon is 112—malignant 65, benign 47. Anterior operation, 84; posterior operation, 27; Finney's operation, 1.

*Summary of Operative Results for Malignant and Benign Cases.*

	Anterior operation.	Posterior operation.	Total.
Great relief or cure . . . . .	36 (43%)	15 (55%)	51 (46%)
Relieved . . . . .	7	3	10
No relief . . . . .	8	—	8
Result unknown . . . . .	4	4	8
Died . . . . .	29 (34%)	5 (18%)	34 (30%)
	—	—	
	84	27	

Finney's operation, 1. Relieved.

"Vicious circle" in connection with anterior operation, 6 (7 per cent.); died, 4.

" " in connection with posterior operation, 2 (7 per cent.); both died.

*Mortality.*

		Per cent.
Operative mortality . . . . .	Malignant (22 deaths)	33·8
	Benign . (12 deaths)	25·5
Total operative mortality . . . . .	(34 deaths)	30·3
Mortality from all causes . . . . .	Malignant (31 deaths)	47·6
	Benign . (14 deaths)	29·7
Total mortality from all causes . . . . .	(45 deaths)	40·1

Table of Operative Mortality.

Year.	Total number of operations.	Malignant. R. D.	Mortality.	Benign. R. D.	Mortality.	Total operative mortality.	Year.
1891	1	— 1	100%	— —	—	100%	1891
1895	1	1 —	—	— —	—	—	1895
1897	1	1 —	—	— —	—	—	1897
1898	1	1 —	—	— —	—	—	1898
1899	7	4 3	42%	— —	—	42%	1899
1900	8	4 2	33%	1 1	50%	50%	1900
1901	17	8 5	38%	2 2	50%	41%	1901
1902	13	4 5	55%	3 1	25%	46%	1902
1903	12	5 2	28%	4 1	20%	25%	1903
1904	15	5 1	16%	7 2	28%	20%	1904
1905	36	10 3	23%	18 5	21%	22%	1905
Grand total	112	43 22	38·8%	35 12	25·5%	30·3%	

*Cause of Death in Fatal Cases.*

<i>Malignant.</i> —Peritonitis	.	.	.	9*
Collapse	.	.	.	8
Pneumonia	.	.	.	2
Asthenia	.	.	.	3
<i>Benign.</i> —Peritonitis	.	.	.	7†
Vicious circle	.	.	.	2
Shock	.	.	.	1
Gangrene of lung	.	.	.	1
Unknown	.	.	.	1

*Secondary Operations.**Vide page 18.*

\* Leakage from anastomosis, 3; leakage from perforated malignant ulcer, 1; leakage from suture line of stomach after pylorotomy, 1; post-operative in remainder.

† Post-operative, 3; following entero-enterostomy for vicious circle, 2; leakage from anastomosis, 1; leakage from perforated ulcer, 1.

TABLE I.—*Gastro-enterostomy*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumour.	Dist. stomach
1	1891	Carcinoma	Pylorus	F.	31	Wasting 10 months; pain and vomiting 3 months	Recently noticed, movable	Yes
2	1895	Ditto	„	F.	43	Vomiting and occasional hæmatemesis for 8 months; wasting for last 6 months	Yes	„
3	1897	Ditto	Pylorus, greater curvature and omentum	F.	46	Epigastric pain and "coffee-ground" vomiting for 10 months; wasting 8 months	No	„
4	1898	Ditto	Pylorus	M.	53	Abdominal pain 8 months, wasting 3 months, vomiting 1 month	Yes	„
Same case	1899	Recurrent carcinoma	Pyloric end of stomach			Pain and incessant vomiting for 3 weeks	No	—
5	1899	Carcinoma	Pylorus and adjacent 3 in. of stomach	M.	23	15 months occasional pain and progressively increasing vomiting	Yes	Slight
6	1899	Ditto	Pylorus	M.	58	Abdominal pain and vomiting for 5 months; no hæmatemesis	„	Yes
7	1899	Ditto	Stomach, 1½ in. from pylorus	M.	60	Pain, vomiting, and wasting for 1 year; no hæmatemesis	„	No
8	1899	Ditto	Extensive malignant ulcer at pyloric end of stomach	M.	33	Occasional vomiting and pain with rapid wasting for 6 months; copious vomiting for 3 weeks before admission	No	Yes
9	1899	Ditto	Stomach, large growth in anterior wall	M.	35	Pain and vomiting for 7 months; no hæmatemesis	Yes, large	No



## Malignant Disease.

Free HCl.	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
No note	Gastro-jejunostomy with Senn's plates, 3 in. beyond commencement of jejunum	Anterior	Death from collapse in 12 hours	P.M.—Small growth almost completely obliterating pyloric aperture. Anastomosis sound to water-pressure test. Fluid readily passed into small intestine.
Free HCl	Gastro-jejunostomy with Senn's plates, 17 in. from commencement of jejunum	Ditto	Death from cerebral hæmorrhage on 49th day; no vomiting after operation	P.M.—Opening in stomach 1 in. from lower border and 3 in. from pylorus. It just admitted the little finger and fluid readily passed into the jejunum. Remnants of Senn's plates still present. Stomach much dilated. Large hæmorrhage in left subarachnoid space.
No note	Excision of oval portion of stomach and jejunum, and suture with silk by Halstead's method	Ditto	Died of asthenia 5 months later; vomiting ceased after operation but pain persisted	—
No HCl	Pylorectomy and posterior implantation of duodenum	—	Uninterrupted recovery; discharged cured on 45th day	Readmitted 11 months later with vomiting and pain of 3 weeks' duration.
—	Gastro-jejunostomy with silk sutures	Anterior	Death from collapse on following day	P.M.—Anastomosis sound. Recurrent growth had completely occluded orifice of implanted duodenum.
No note	Gastro-jejunostomy with continuous silk sutures near cardiac end of stomach	Ditto	Occasional vomiting until death on 16th day	P.M.—Annular growth soft and ulcerating. Anastomosis firm and admitted index finger. One pint of fluid in stomach. Letter of inquiry unanswered.
No free HCl	Gastro-jejunostomy with interrupted silk sutures	Ditto	Uninterrupted recovery; pain relieved and vomiting ceased	
No note	Gastro-jejunostomy with Allingham's bobbin	Ditto	Died of shock 6 hours later	P.M.—Union firm and watertight. Stomach contained 1½ pints of undigested food, including meat, potatoes, etc. One piece of meat was so large that it was tightly impacted in the bobbin. Secondary growths in liver and portal glands.
Ditto	Gastro-jejunostomy with continuous silk sutures	Ditto	Died on 17th day; vomiting commenced on 9th day	P.M.—General peritonitis due to leakage from pin-hole perforation of malignant ulcer, on great curvature, 2 in. to right of perfect anastomosis.
Ditto	Gastro-jejunostomy with Halstead's silk sutures after excision of redundant mucous membrane	Posterior	Uninterrupted recovery	Died 15 months later.

TABLE I.—*Gastro-enterostomy*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumours.	Dilatation of stomach.
10	1899	Carcinoma	Pylorus, large growth	M.	28	Vomiting after food for 4 years with spells of freedom; acute pain, frequent vomiting, and loss of flesh for last 9 months	Yes	Yes
11	1900	Ditto	Pylorus	F.	33	Indigestion for 7 years; occasional vomiting for 20 months, worse during last 8 months; wasting 7 months	"	"
12	1900	Ditto	Pylorus, large growth	M.	44	Pain after food and loss of flesh for 3 months; no vomiting	Noticed 2 weeks before admission	No
13	1900	Ditto	Pylorus	M.	39	Treated for "gastric ulcer" for 13 months; vomiting 3 months	Noticed 10 months	Ditto
14	1900	Ditto	Old ulcer of pylorus, malignant microscopically	M.	40	Dyspepsia 17 years; frequent vomiting and pain after food for 10 months	No	Yes
15	1900	Ditto	Pylorus	M.	25	"Bilious" attacks with flatulence for 4 years; vomiting and pain after food for 1 year	Yes, small	"
17	1900	Ditto	Stomach, great curvature	M.	47	Pain and vomiting after meals, becoming progressively worse for 7 months	Yes	No
18	1901	Ditto	Pylorus, small growth	F.	26	Pain and occasional vomiting 8 months; "coffee-ground" vomit after every meal for last month	Yes, small	Yes
Same case	1901	Ditto	Metastasis			Three months' relief after pylorotomy, then pain and distension after food, with vomiting and diarrhoea for 1 month	No	Yes

## Malignant Disease—continued.

Free HCl	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Free HCl	Gastro-jejunostomy with continuous silk sutures	Anterior	Vomited several times and had to have rectal alimentation for 8 days; later was able to take food well and gained in weight	No reply to letter of inquiry.
Ditto	Ditto	Ditto	Uninterrupted recovery	" " "
No note	Gastro-jejunostomy with silk sutures	Ditto	Ditto	Pain unrelieved. No reply to letter of inquiry.
Ditto	Ditto	Ditto	Ditto	Vomiting ceased after operation. No reply to letter.
Ditto	Ditto	Ditto	Death in 2 days	P.M.—General peritonitis. Stomach dilated to three times its normal size but empty. Perfect anastomosis $\frac{1}{4}$ in. in diameter. Pylorus would barely admit a pencil.
No free HCl	Ditto	Ditto	Death in 14 days	Wound suppurated. Frequent vomiting after operation. No p.m.
Ditto	Gastro-jejunostomy with interrupted "Halstead" silk sutures	Ditto	Vomited for 4 days after operation then recovered and was much relieved	Died at home 3 months later.
No note	Pylorectomy and posterior implantation of duodenum by Kocher's method	—	Uninterrupted recovery	Margin on duodenal side of growth very small,
Ditto	Gastro-jejunostomy with continuous silk sutures	Anterior	Ditto	Readmitted 41 days after gastro-jejunostomy, having been free from pain or vomiting for 6 weeks after anastomosis, when frequent vomiting and pain again commenced. Died a few days later. Therefore only lived 5½ months after pylorectomy. P.M.—Cicatricial contraction of gastro-duodenostomy, the opening barely admitting the little finger. Gastro-jejunostomy sound 1 in. in length.
Infected glands in gastro-hepatic omentum; secondary growths also in liver and aortic glands.				

TABLE I.—*Gastro-enterostomy fo*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumour.	Dilate stomach.
19	1901	Carcinoma	Pylorus and adjacent two thirds of stomach	M.	66	Felt "unwell" for 1 year; vomiting for 3 months, becoming progressively worse	Yes, large and fixed	Yes
20	1901	Ditto	Pylorus and lesser curvature	F.	46	Indigestion 4 years; wasting for 1 year; tumour noticed 5 weeks ago; occasional vomiting and pain for 2 weeks	Yes	"
22	1901	Ditto	Pylorus and stomach	M.	26	Treated for gastric ulcer with hæmatemesis for 2 years; frequent vomiting and pain for 2 weeks	"	"
23	1901	Ditto	Duodeno-jejunal junction	M.	49	Vomiting and pain for 8 months	"	"
24	1901	Ditto	Pylorus	M.	55	Dyspepsia for 3 years; epigastric pain and vomiting for 3 months	No	"
25	1901	Ditto	"	M.	56	Vomiting, pain, and wasting for 6 weeks	Yes	"
27	1901	Ditto	"	M.	34	Dyspepsia for 8 years; increased pain 7 months; vomiting and one hæmatemesis 5 months	No	"
28	1901	Ditto	"	M.	46	Dyspepsia for 6 months; no vomiting	Yes	"
29	1901	Ditto	"	M.	49	Pain, eructations, and vomiting for 6 months	Yes, large	Slight
30	1901	Ditto	"	M.	62	Pain 6 months; vomiting and wasting 5 months	Ditto	Yes
31	1901	Ditto	? Pylorus, nothing felt at operation	F.	50	Indigestion and flatulence for 5 years; "coffee-ground" vomiting 3 months	No	No note

*malignant Disease*—continued.

Case No.	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
No. 107	Gastro-enterostomy with continuous silk sutures	Anterior	Death in 15 days	P.M.—Dilated stomach. Large growth nowhere ulcerated; enlarged glands in mesocolon. Gastro-intestinal anastomosis 6 in. from pylorus and 18 in. from ileo-cæcal valve.
110	Gastro-jejunostomy with continuous silk sutures	Ditto	Uninterrupted recovery	Now dead, date unknown.
111	Ditto	Posterior	Much relieved by operation, but died 8 weeks later	Occasional vomiting and great pain commenced 10 days before death. P.M.—Gastro-jejunostomy, large, patent and sound.
112	Resection of growth, closure of both ends of divided bowel and gastro-jejunostomy by lateral approximation	Anterior	Died on 7th day	P.M.—General peritonitis. Leakage from anastomosis owing to stitches tearing out in places.
No free HCl	Gastro-jejunostomy with silk sutures	Ditto	Died under anæsthetic	P.M.—Anastomosis sound and watertight.
No note	Gastro-jejunostomy with continuous silk sutures	Ditto	Died on 4th day	No p.m.
Free HCl	Ditto	Ditto	Uninterrupted recovery	Died 16 months later.
No note	Ditto	Posterior	Much relieved; died of pneumonia 1 month later	P.M.—Large growth. Anastomosis perfect and two thirds of an inch long.
113	Ditto	Anterior	Died on 6th day	P.M.—No peritonitis. Large annular growth of pylorus. Anastomosis perfect.
114	Ditto	Ditto	Died of phthisis on 19th day; slight vomiting for 3 days after operation	P.M.—Large annular growth of pylorus; no secondaries. Large opening between stomach and bowel. Pleurisy and caseous tuberculosis of right lung.
115	Ditto	Ditto	Uninterrupted recovery; now alive and well	Now 5 years since anastomosis. For first 3 years enjoyed perfect health, then pain and vomiting commenced again.

Readmitted in July, 1905. Abdominal exploration. Large mass of growth found adherent to posterior layer of rectus sheath and adjacent bowel; origin doubtful. Slight pain, without vomiting, for 8 months. Now for the last 7 months has had no pain or vomiting and has gained 2 st. in weight; can eat ordinary food.

TABLE I.—*Gastro-enterostomy for*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumour.	Dilate stomach.
34	1902	Carcinoma	Pylorus	F.	41	Indigestion for 6 years, worse during last 2 years; pain and vomiting 1 year; no hæmatemesis	Yes	Yes
35	1902	Ditto	"	M.	58	Pain after food, constant vomiting of blood-stained fluid, and marked wasting for 4 months	Large and visible	"
36	1902	Ditto	"	M.	46	Eructations 7 months; vomiting 3 months; no hæmatemesis	Ditto	"
37	1902	Ditto	"	M.	36	Frequent vomiting and rapid wasting for 4 months; no hæmatemesis	Ditto	"
38	1902	Ditto	"	F.	51	Dyspepsia 6 years; vomiting 18 months, worse during last 12 months, and contained blood	Yes	"
40	1902	Ditto	Pylorus and stomach	F.	47	Pain 15 months; vomiting and loss of weight 8 months; no hæmatemesis	"	"
41	1902	Ditto	Pylorus	M.	54	Dyspepsia 7 months; vomiting and abdominal pain 4 months; no hæmatemesis	"	"
45	1902	Ditto	"	M.	45	History 2 years; pain and vomiting after food for 3 days, then well for a week; hæmatemesis for last 3 months	No	"
46	1902	Ditto	Pylorus and stomach	F.	50	Vomiting after food for 10 weeks; hæmatemesis 2 weeks	Yes, large	"
47	1903	Ditto	Pylorus	M.	56	Pain, vomiting and wasting for 1 year; no hæmatemesis	Yes	"

Malignant Disease—continued.

Free HCl	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Free HCl	Gastro-jejunostomy with continuous silk sutures	Anterior	Uninterrupted recovery	Four months pregnant. No answer to letter of inquiry.
No free HCl	Ditto	Ditto	Died on 9th day	P.M.—General peritonitis, most intense around anastomosis. Large annular pyloric growth. Secondaries in glands. Anastomotic opening large, patent, and sound to water-pressure test.
No note	Ditto	Ditto	Died of collapse a few hours later	P.M.—Annular ulcerated pyloric growth invading adjacent 2 in. of stomach; secondaries in glands. Anastomosis 12 in. from duodeno-jejunal junction, patent and watertight. Opening size of five-shilling piece.
No free HCl	Ditto	Ditto	Died on 7th day	P.M.—Peritonitis in upper half of abdomen following leakage from anastomosis due to stitch cutting out. Anastomosis size of halfpenny.
Free HCl	Ditto	Ditto	Recovery uninterrupted	—
No free HCl	Ditto	Ditto	Died 12 hours after operation	P.M.—Large growth; secondaries in bronchial and tracheal glands. Anastomosis watertight.
Ditto	Gastro-enterostomy with interrupted silk sutures	Ditto	Uninterrupted recovery	No answer to letter of inquiry.
Free HCl	Gastro-jejunostomy with continuous silk sutures	Posterior	Ditto	Large fixed growth. No answer to letter of inquiry.
No note	Ditto	Anterior	Unexplained sudden death on 4th day; no vomiting after operation	P.M.—No peritonitis. Anastomosis perfect and easily admitted finger. Secondaries in gastro-hepatic omentum.
Ditto	Ditto	Ditto	Died of peritonitis on 10th day; vomited frequently after operation	P.M.—Anastomosis above middle of greater curvature had leaked anteriorly. Cardiac end of stomach enormously dilated and filled with fluid, but beyond anastomosis the viscus was empty and had contracted to the size of the colon. The gastric contents could be squeezed into the small bowel but passed along loop towards pylorus and would only pass down jejunum by manipulation. This was due to the fact that the anastomosis was not situated at the most dependent part of the stomach, and in consequence the distal part of the jejunum was kinked.

TABLE I.—*Gastro-enterostomy for*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumours.	Dilated stomach.
48	1903	Ditto	Pylorus	M.	45	Dyspepsia for 1 year; frequent pain and vomiting with occasional hæmatemesis for last 6 months	Yes	Yes
49	1903	Ditto	Pylorus and lesser curvature	F.	39	Epigastric pain after food commenced 5 years ago; treated for gastric ulcer for 1 year and recovered; vomiting commenced 7 months ago; never vomited blood	Yes, large	No
50	1903	Ditto	Pylorus and stomach	M.	62	Epigastric pain for 2 years; "coffee-ground" vomiting only commenced 2 weeks ago	Yes	Yes
53	1903	Ditto	Stomach, anterior and posterior surfaces	F.	50	Pain and vomiting after food for 6 months; no hæmatemesis	"	—
55	1903	Ditto	Pylorus and lesser curve	M.	25	Flatulence, pain and vomiting 3 hours after food for 3 months; never vomited blood	No	Yes
56	1903	Ditto	Pylorus	M.	61	Pain and vomiting after food for 1 year; no hæmatemesis	"	"
60	1904	Ditto	"	M.	50	Pain for 7 months; vomiting for 6 weeks; no hæmorrhage	Yes	"
61	1904	Sarcoma, large round-celled	"	M.	49	Pain after food for 8 months and occasional vomiting for 5 weeks	No	"



*Malignant Disease*—continued.

Free HCl.	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
No free HCl	Ditto	Anterior	Vomited once on 6th and 9th days after operation; died suddenly whilst getting up to go home	P.M.—Multiple pulmonary emboli. Anastomosis perfect. Annular pyloric growth with secondaries in liver and greater and lesser omenta.
Ditto	Ditto	Ditto	Uninterrupted recovery; died 7 months later	Symptoms only slightly relieved by operation.
Ditto	Ditto	Ditto	Vomited on 3rd day and occasionally until death on 6th day	P.M.—Pneumonia. Anastomosis patent and water-tight. Ulcerated growth of pylorus and stomach; secondaries in glands, liver, and left adrenal.
Ditto	Gastro-jejunosomy with continuous silk sutures and excision of redundant mucous membrane	Ditto	Uninterrupted recovery; vomiting ceased and pain diminished	Died 14 months later.
Free HCl	Gastro-jejunosomy with Halstead's interrupted silk sutures and duodeno-jejunosomy with Murphy's button after constriction of proximal end of jejunum with silver ring	Posterior	Uninterrupted recovery; button passed on 12th day	Readmitted 3 months later suffering with great pain and frequent vomiting. Large tumour then palpable in epigastrium. Slightly relieved by rectal feeding. Very weak when discharged. No reply to letter.
Free HCl (very small quantity)	Gastro-jejunosomy and entero-enterostomy with silk sutures; excision of redundant mucous membrane	Ditto	Uninterrupted recovery	Writes 3 years later: "In great pain, can only eat soft food, have lost weight. No vomiting since operation."
No free HCl	Gastro-jejunosomy with silk sutures	Anterior	Four days after operation vomited copiously for 2 days and then ceased; pain slightly relieved; died of asthenia 4 weeks after operation	P.M.—Annular pyloric growth adherent to pancreas. Nodules of growth around orifice of perfect anastomosis. Secondaries in omentum, liver, and mesenteric glands.
Ditto	Pylorectomy and closure of divided ends of stomach and duodenum; gastro-jejunosomy with silk sutures	Ditto	No vomiting; died on 19th day	P.M.—Gastro-jejunosomy sound. Food-containing cavity, due to leakage, formed around sutured pyloric end of stomach. Small growth, microscopically myoma, 1 in. from cardiac orifice. Secondary sarcomatous growths in 5th and 7th left ribs. Multiple pulmonary abscesses.

TABLE I.—*Gastro-enterostomy for*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.
62	1904	Carcinoma	Pylorus	M.	70	Wasting several months; pain and vomiting 6 weeks	Yes, visible	Yes
65	1904	Ditto	„	M.	49	Gradual onset of pain and vomiting for 10 months; relation to food variable; wasting; no blood in vomit	Yes	„
66	1904	Ditto	„	F.	29	Occasional abdominal pain and vomiting for 9 months; operation for leaking gastric ulcer 5 months ago; no perforation found, but pylorus surrounded with lymph and much thickened; quite well for 4 months, when pain and vomiting recurred.	No	Slight
72	1904	Ditto	Pylorus, small annular growth	F.	35	Wasting for 6 months; pain for 2 months with two severe attacks of "coffee-ground" vomiting	Yes	Yes
73	1905	Ditto	Pylorus, small growth	M.	59	Attack of pain and vomiting 1 year ago; since then progressively increasing dyspepsia; no hæmatemesis	No	No
74	1905	Ditto	Pylorus, glands in gastro-hepatic omentum	M.	30	Dyspepsia for 12 years; slight vomiting; never brought up blood; severe pain and rapid wasting for 1 month	„	Yes
75	1905	Ditto	Pylorus and lesser curve	M.	48	Pain and vomiting after food for 9 months; never brought up blood	„	„
81	1905	Ditto	Pylorus, large growth	F.	50	Pain and occasional vomiting 4 hours after food for 1 year	Yes	„

Malignant Disease—continued.

Free HCl.	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
No free HCl	Gastro-jejunostomy with continuous silk sutures	Posterior	Uninterrupted recovery; much relieved when discharged	No answer to letter of inquiry.
No note	Ditto	Anterior	Uninterrupted recovery; greatly relieved	Ditto.
Ditto	Gastro-jejunostomy with continuous silk sutures and subsequent pylorotomy	Posterior	Uninterrupted recovery	Microscopically early carcinoma. No reply to letter of inquiry.
Ditto	Gastro-jejunostomy with continuous silk sutures and subsequent pylorotomy; removal of appendix and drainage of abscess during convalescence	Ditto	Recovered rapidly from all 3 operations	No signs of new growth in appendix. Seen 2 years later and declares herself almost quite well. Has not gained weight and looks anæmic, but can eat ordinary food, and, beyond slight pain in the left side, suffers no inconvenience. No signs of recurrence detected on examination.
No free HCl (3 examinations)	Gastro-enterostomy with continuous silk sutures; entero-enterostomy 9 days later, when bowel on duodenal side of anastomosis found dilated and jejunum beyond collapsed	Anterior	"Vicious circle"; vomited frequently for 9 days after operation; vomiting ceased after entero-enterostomy, and he could take soft food though it occasioned great pain	Readmitted 9 months later. During this period had felt much relieved, and though weak and troubled with occasional vomiting had been able to get about. Abdominal exploration revealed extensive growth and metastases. Died 10 days later.
Free HCl in large quantity	Gastro-jejunostomy with continuous silk sutures	Posterior	Uninterrupted recovery	One year later writes: "I feel very well since my operation, and have gained weight. Have not been sick and can eat ordinary food. I get occasional attacks of pain in the stomach, but it only lasts for a few hours."
No free HCl	Ditto	Ditto	Ditto	Pain and vomiting ceased after operation and weight increased. Died 9 months later.
Free HCl	Ditto	Anterior	Ditto	Writes 13 months later: "Am now quite well and have never felt the old pain again. Can now eat anything and have gained 2 st. in weight."

TABLE I.—*Gastro-enterostomy fo*

No.	Year.	Disease.	Situation.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.
85	1905	Ditto	Pylorus and both curvatures of stomach	F.	46	Epigastric pain 1 hour after food for 12 months; vomiting for last 2 weeks only; never brought up blood	Yes, large	Yes
86	1905	Ditto	Large growth at cardiac end of stomach, glands in gastro-hepatic omentum	M.	43	Vomiting and abdominal pain for 2 years	Yes	No
90	1905	Round-celled sarcoma	Pylorus	M.	64	Pain after food for 3 months; unable to eat solids for 3 weeks; emaciation rapid	No	„
91	1905	Carcinoma	Stomach, large growth	M.	37	Pain after food for 4 months; vomited once daily; never brought up blood	Yes	„
92	1905	Ditto	Pylorus and stomach	M.	63	“Coffee-ground” vomiting and diarrhoea 2 years ago; 8 months ago vomiting commenced again	Yes, large	Yes
93	1905	Ditto	Ditto	M.	36	Indigestion commenced 8 months ago; during this time vomited at night and for the last 2 months has brought up blood	Yes	„
95	1905	Ditto	Stomach, pyloric half	M.	52	Dyspepsia for 10 months with occasional vomiting; progressively worse for last 6 months; never brought up blood	Yes, large	No
103	1905?	Carcinoma	Pylorus; large mass	M.	56	Dyspepsia for years; pain worse for 8 months; three months ago vomited large quantities daily, irrespective of meals. No hæmatemesis	Yes	Yes
104	1905	Growth of nature	Large mass in mesentery of upper jejunum; intestine adherent to growth	M.	47	Dyspepsia for 8 years; pain after food for 8 months; no vomiting	Yes, large	„

**Malignant Disease**—continued.

Free HCl.	Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
No note	Gastro-jejunosomy with continuous silk sutures	Anterior	Uninterrupted recovery; much relieved by operation	For 5 months could eat ordinary food without pain and gained 2 st. in weight. After this pain recommenced and growth rapidly increased in size. Died 8 months after operation.
Free HCl	Ditto	Ditto	Vomiting ceased and pain much relieved; died 2 months later of pneumonia	No p.m.
No free HCl	Pylorectomy and gastro-jejunosomy with silk sutures	Posterior	Death from shock in 24 hours	P.M.—Anastomosis watertight. No secondary deposits.
No note	Gastro-jejunosomy with silk sutures	Anterior	Died 24 days later; vomited continuously for 4 days after operation, this ceased for 4 days and then began again and lasted till death	No p.m. No signs of peritonitis before death.
No free HCl	Gastro-jejunosomy with silk sutures and entero-enterostomy 2 days later	Ditto	"Vicious circle"; vomiting ceased immediately after entero-enterostomy; died 4 days later	P.M.—No peritonitis. Bronchopneumonia and gangrene of lung. Water would not pass through jejunum beyond gastro-enterostomy owing to kink in bowel.
Ditto	Gastro-jejunosomy with silk sutures; exploratory celiotomy 14 days later but growth not removable	Posterior	Died 2 months later	P. M.—Annular pyloric growth involved stomach for 2½ ins. Secondaries in liver and glands. Left pleural effusion. Anastomosis sound, size of a sixpence.
Not examined	Gastro-jejunosomy with silk sutures	Ditto	Uninterrupted recovery; much relieved; died 10 months later	Lived on milk and soft foods. Pain and vomiting recommenced shortly before death.
Ditto	Ditto	Anterior	Uninterrupted recovery	Writes 10 months later: "I now feel quite well and have reached normal weight, having gained 28 lb. since operation. Can eat ordinary food and have no pain or vomiting."
No note	Ditto	Ditto	Uninterrupted recovery; died 4 months later	—

*Secondary Operations.*

**Malignant 6, died 1.**

No. 93.—Exploratory cœliotomy (removal of growth impossible), one; recovered.

No. 73.—Entero-enterostomy for vicious circle, one; recovered.

No. 92.—Entero-enterostomy for vicious circle, one; died.

No. 72.— Appendicectomy and drainage of appendix abscess, one; recovered.

No. 72.—Subsequent pylorotomy, one; recovered.

No. 66.—Subsequent pylorotomy, one; recovered.

**Benign 5, died 3.**

No. 70.—Entero-enterostomy for vicious circle, one; recovered.

No. 106.—Entero-enterostomy for vicious circle, one; died.

No. 89.—Second gastro-jejunoscopy and immediate entero-enterostomy, one; died.

No. 94.—Gastrolysis, one; died.

No. 71.—Suture of perforated jejunal ulcer twice, one; recovered.

*Summary of Operations for Malignant Disease.*

The total number of cases subjected to gastro-intestinal anastomosis was 65. Of these, 63 had carcinoma and 2 sarcoma.

*Sex.*—Males 47, females 18.

Disease.	Males.	Females.	Total.
Carcinoma of pylorus . . . . .	28	11	39
Carcinoma of pylorus and stomach . . . . .	8	6	14
Carcinoma of stomach . . . . .	7	1	8
Carcinoma of jejunum . . . . .	2	—	2
Sarcoma of pylorus . . . . .	2	—	2
	47	18	65

The average age of these was 44. The youngest was 23 (carcinoma of pylorus and stomach) and the oldest 70 (carcinoma of pylorus).

A palpable tumour was present in 49, and in several instances it was large enough to be visible.

An antecedent history of "indigestion" for more than two years was obtained in 19.

As far as it was possible to ascertain from notes, the presence or absence of free hydrochloric acid was estimated in 33. In the remaining 32 the stomach contents were either not examined or the result was not recorded in the notes.

Disease.	No. of cases.	Palpable tumour.	HCl present.	HCl absent.
Carcinoma of pylorus . . . . .	39	29	10	11
Carcinoma of pylorus and stomach . . . . .	14	11	1	6
Carcinoma of stomach . . . . .	8	7	1	2
Sarcoma of pylorus . . . . .	2	0	0	2

*Technique.*—The anterior operation was performed in 49 cases. Senn's plates were used twice and Allingham's bone bobbin once. In these 3 cases the result as regards the anastomosis was perfectly satisfactory. The anastomosis was effected by silk sutures alone in the remaining 46. Three of these died of peritonitis due to leakage at the

suture line, and 3 developed vicious-circle vomiting (see special table of vicious circle).

*Results of anterior operation.*—Great relief 23; no relief 5; died 21; vicious circle 3.

*The posterior operation* was performed in 16 cases—simple suture with silk 15, Murphy's button 1. In the latter instance the result was perfectly satisfactory, and the button was passed on the twelfth day.

*Result of posterior operation.*—Great relief 12; no relief 3; died 1.

*Gastro-enterostomy combined with Pylorectomy or Enter-enterostomy.*

Pylorectomy and posterior implantation of duodenum, 2 cases—

(1) No. 4.—Good result for eleven months, then re-admitted for anterior gastro-jejunostomy and died of shock.

(2) No. 18.—Relieved for three months, then readmitted for anterior gastro-jejunostomy, and died of asthenia six weeks later.

In both these cases the result of posterior implantation was not satisfactory, for at the autopsy in No. 4 the duodenal orifice was occluded by recurrent growth, and in No. 18 the opening was so narrowed by cicatricial contraction as only to admit the little finger.

Posterior gastro-enterostomy and subsequent pylorectomy, 2 cases—

(1) No. 66.—Good result.

(2) No. 72.—Good result; still alive two years later.

Pylorectomy and anterior gastro-enterostomy (No. 61) died of leakage from suture line at pyloric end of stomach.

Posterior gastro-jejunostomy and immediate enter-enterostomy, 2 cases—

(1) No. 55.—Relieved; lived four months.

(2) No. 56.—Good result; still alive three years later.



*Summary of Results.*

Out of 65 patients who were operated upon 39 left the hospital alive. Twenty of these have since been traced, and 6 are known to be still alive, ten months, thirteen months, one year, two years, three years, and five years after operation. The average duration of life in those who were discharged and have since died is eight and a half months.

*Table of*

No.	Sex.	Age.	Site of growth.	Operation.	Recovery. Death.	
1	F.	31	Pylorus	Anterior with Senn's plates	—	1
2	F.	43	"	" "	1	—
4	M.	53	"	Pylorectomy and posterior implantation of duodenum	1	—
Same case	M.	53	Recurrence in pyloric end of stomach	Anterior with silk sutures	—	1
6	M.	58	Pylorus	" "	1	—
10	M.	28	"	" "	1	—
11	F.	33	"	" "	1	—
12	M.	44	"	" "	1	—
13	M.	39	"	" "	1	—
14	M.	40	"	" "	—	1
15	M.	25	"	" "	—	1
18	F.	26	"	Pylorectomy and posterior implantation of duodenum	1	—
Same case	F.	26	Metastasis	Anterior with silk sutures	1	—
24	M.	55	Pylorus	" "	—	1
25	M.	56	"	" "	—	1
27	M.	34	"	" "	1	—
28	M.	46	"	Posterior with silk sutures	1	—
29	M.	49	"	Anterior with silk sutures	—	1
30	M.	62	"	" "	1	—
31	F.	50	? Pylorus	" "	1	—
34	F.	41	Pylorus	" "	1	—

**Results.**

After-history.	Duration of life.	Remarks.
—	12 hours	Small growth; anastomosis sound.
Much relieved	49 days	Death from cerebral hæmorrhage. Anastomosis sound, but only admitted tip of little finger.
Good result	11 months	Readmitted 11 months later with pain and vomiting.
—	24 hours	Collapse; recurrent growth had completely occluded orifice of implanted duodenum.
Pain relieved and vomiting ceased	Unknown	—
Greatly improved and gained weight	"	—
Good result	"	—
No relief	"	—
Good result	"	—
—	2 days	General peritonitis; anastomosis perfect.
Frequent vomiting	14 days	No P. M. ? Peritonitis.
Good result; relief for 3 months	5½ months	Readmitted for gastro-jejunosomy 4 months after pylorotomy.
Much relief	6 weeks	Died of asthenia. P.M.—Cicatrical contraction of gastro-duodenostomy. Gastro-jejunosomy sound.
—	—	Died under anæsthetic.
—	4 days	No P.M.
Much relieved	16 months	—
"	1 month	Death from pneumonia; anastomosis perfect.
Asthenia	6 days	No peritonitis; anastomosis perfect.
Phthisis	19 days	Anastomosis perfect; tubercle of lungs.
Perfect health for 3 years, then pain and vomiting recommenced. Readmitted for abdominal exploration 4 years later. Large mass of growth adherent to bowel and rectus sheath. Since then has gained 2 st. and feels quite well	5 years	Still alive.
Good result	Unknown	—

Table of

No.	Sex.	Age.	Site of growth.	Operation.	Recovery. Death.	
35	M.	58	Pylorus	Anterior with silk sutures	—	1
36	M.	46	"	" "	—	1
37	M.	36	"	" "	—	1
38	F.	51	"	" "	1	—
41	M.	54	"	" "	1	—
45	M.	45	"	Posterior with silk sutures	1	—
47	M.	56	"	Anterior with silk sutures	—	1
48	M.	45	"	" "	—	1
56	M.	61	"	Posterior with silk and immediate entero-enterostomy	1	—
60	M.	50	"	Anterior with silk sutures	1	—
62	M.	70	"	Posterior with silk sutures	1	—
65	M.	49	"	Anterior with silk sutures	1	—
66	F.	29	"	Posterior with silk and subsequent pylorotomy	1	—
72	F.	35	"	Posterior with silk and subsequent pylorotomy; later appendicectomy and drainage of abscess	1	—
73	M.	59	"	Anterior with silk sutures, and entero-enterostomy for vicious circle 9 days later	1	—
74	M.	30	"	Posterior with silk sutures	1	—
81	F.	50	"	Anterior with silk sutures	1	—
103	M.	56	"	" "	1	—
3	F.	46	Pylorus and stomach	" "	1	—
5	M.	23	" "	" "	—	1
19	M.	66	" "	" "	—	1
20	F.	46	" "	" "	1	—
22	M.	26	" "	Posterior with silk sutures	1	—
40	F.	47	" "	Anterior with silk sutures	—	1

*Results—continued.*

After-history.	Duration of life.	Remarks.
—	9 days	General peritonitis; anastomosis sound.
Collapse	2 hours	Large anastomosis.
—	7 days	Peritonitis due to leakage from anastomosis.
Good result	Unknown	—
"	"	—
"	"	—
Sudden death	10 days	Peritonitis due to leakage from anastomosis; distal part of jejunum kinked.
Sudden death from pulmonary emboli	9 days	No peritonitis; anastomosis perfect.
Good result	Still alive	Great pain and rapid wasting 3 years later; no vomiting.
Relieved	1 month	Death from asthenia; anastomosis perfect.
Good result	Unknown	—
"	"	—
"	"	—
"	Still alive	Two years since operation and still quite well; no signs of recurrence.
"	9 months	Died of asthenia.
"	Still alive	Feels quite well 1 year later.
"	"	Feels quite well 18 months later.
"	"	Feels quite well 10 months later.
"	5 months	—
Asthenia	16 days	Anastomosis sound and admitted index finger.
—	15 days	Anastomosis sound, but 18 inches from ileo-cæcal valve.
Good result	Unknown	Now dead, date unknown.
Much relieved	8 weeks	Anastomosis large and sound.
—	12 hours	Death sudden and unexplained.

*Table of*

No.	Sex.	Age.	Site of growth.	Operation.	Recovery. Death.	
46	F.	50	Pylorus and stomach	Anterior with silk sutures	—	1
49	F.	39	" "	" "	1	—
50	M.	62	" "	" "	—	1
55	M.	25	" "	Posterior with silk sutures and entero-enterostomy with Murphy's button	1	—
75	M.	48	" "	Posterior with silk sutures	1	—
85	F.	46	" "	Anterior with silk sutures	1	—
92	M.	63	" "	Anterior with silk and entero-enterostomy 2 days later for vicious circle	—	1
93	M.	36	" "	Posterior with silk sutures	1	—
7	M.	60	Stomach	Anterior with Allingham's bone bobbin	—	1
8	M.	33	"	Anterior with silk sutures	—	1
9	M.	35	"	Posterior with silk sutures	1	—
17	M.	47	"	Anterior with silk sutures	1	—
53	F.	50	"	" "	1	—
86	M.	43	"	" "	1	—
91	M.	37	"	" "	—	1
95	M.	52	"	Posterior with silk sutures	1	—
23	M.	49	Upper jejunum	Anterior with silk after resection of growth and closure of both ends of bowel	—	1
104	M.	47	" "	Anterior with silk sutures	1	—
61*	M.	49	Pylorus	Pylorectomy and anterior gastro-jejunostomy	—	1
90*	M.	64	"	Posterior with silk sutures	—	1

\* Sarcoma.

*Results*—continued.

After-history.	Duration of life.	Remarks.
—	4 days	Death sudden and unexplained.
Relieved	7 months	—
Pneumonia	6 days	Anastomosis sound.
Relieved	4 months	—
Good result	9 months	—
"	8 months	—
Vomiting ceased immediately after entero-enterostomy	6 days	No peritonitis; broncho-pneumonia; water passed through anastomosis into proximal loop of jejunum, and thence <i>via</i> entero-enterostomy into small bowel; jejunum kinked on distal side of gastro-enterostomy.
Relieved	2 months	Anastomosis sound, size of a sixpence.
Immediate collapse	6 hours	Anastomosis sound.
—	17 days	General peritonitis due to small perforation of malignant ulcer near perfect anastomosis.
Good result	15 months	—
"	3 months	—
"	14 months	—
"	2 months	Death from pneumonia.
No relief	3 weeks	No P.M.
Good result	10 months	—
—	7 days	General peritonitis due to leakage from anastomosis.
Good result	4 months	—
—	19 days	Anastomosis sound; leakage from sutured pyloric end of stomach.
Shock	24 hours	Anastomosis sound.

TABLE II.—*Gastro-*

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.	Free HCl.
16	1900	Cicatricial stenosis of pylorus	F.	39	Pain after food, relieved by vomiting, for 9 weeks	No	Yes	No free HCl
16A	1900	Pyloric stenosis following chronic gastric ulcer	M.	26	Pain after food for 2 years; vomiting for 1 year; no hæmatemesis	"	"	—
21	1901	Chronic gastric ulcer, hour-glass stomach, subsequent perforation of ulcer and formation of local abscess	F.	28	Serious illness due to gastric ulcer 8 years ago; since then suffered from dyspepsia, constant pain and vomiting for 9 weeks, no hæmatemesis	—	"	No note
26	1901	Dilated stomach, ? cause	F.	39	Dyspepsia and flatulence for 1 year	No	"	Ditto
32	1901	Hæmatemesis, ? gastric ulcer	F.	20	Pain for 2 years and 6 attacks of hæmatemesis; another severe attack just before admission; frequent vomiting when under observation	"	No	Ditto
33	1901	Fibrous contraction of stomach after HCl poisoning	M.	38	Drank HCl 10 weeks ago; now vomits $\frac{1}{2}$ an hour after food	"	"	—
39	1902	Dilated stomach, vomiting	M.	50	Abdominal pain and vomiting for 12 years	"	Yes	HCl and lactic acids present
42	1902	Pyloric stenosis	M.	30	Swallowed HCl 1 month before operation	"	"	—
43	1902	Dilated stomach after suture of perforated gastric ulcer	M.	33	Vomiting and flatulence for 4 months after suture of perforated gastric ulcer	"	"	—



*enterostomy for Benign Disease.*

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with silk sutures	Anterior	Died on 19th day	Frequent vomiting daily. P.M.—Perforation of ulcer subsequent to operation. Localised abscess between stomach and liver. Cicatricial stenosis of pylorus following old ulcer. Stomach dilated. Anastomosis round, size of a shilling.
Gastro-jejunostomy with continuous silk sutures	Ditto	Uninterrupted recovery. Discharged much relieved on 40th day	Readmitted 6 months later in state of collapse, and died. P.M.—General peritonitis due to perforation of tuberculous ulcer of small intestine. Multiple ulcers. Pulmonary tuberculosis. Anastomosis perfect. Old cicatrices around narrow pylorus.
Incision and drainage of abscess communicating with ulcer on anterior wall of stomach; gastric fistula drained with rubber tube; closure of fistula and gastro-jejunostomy with silk sutures on 3rd day	Ditto	Died on 5th day	P.M.—Perforated ulcer on posterior surface of stomach at neck of hour-glass, communicating with encysted, drained cavity beneath abdominal wall. Cardiac half of stomach larger than pyloric half. Anastomosis into pyloric half of stomach. Suturing sound.
Gastro-jejunostomy with silk sutures	Posterior	Died on 6th day	No notes or P.M.
Ditto.	Anterior	No relief. Vomited frequently after operation in spite of gastric lavage. No hæmatemesis. Not traced after 4 months	Stomach examined at operation and nothing abnormal found. No answer to letter of inquiry.
Ditto.	Ditto	Uninterrupted recovery. Vomited once on 34th day	Left hospital much relieved. No answer to letter of inquiry.
Ditto.	Ditto	Uninterrupted recovery	No cause found at operation. Writes 4½ years later: "Am now perfectly well, can eat any food, and never vomit."
Ditto	Ditto	Left hospital much relieved	No answer to letter of inquiry.
Ditto	Ditto	Occasional vomiting commenced 15 days after operation, and	Writes 4 years later: "I now feel perfectly well, never vomit, can eat any food, and have gained nearly 14 lb. in weight."

lasted for 14 days. Had not vomited for 3 weeks when he left hospital

TABLE II.—Gastro-enterostomy

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.	Free HCl.
44	1902	Hysterical vomiting	F.	20	History 2½ years; frequent vomiting in spite of rectal alimentation at intervals	No	No	—
51	1903	Fibrous stricture of pylorus following chronic gastric ulcer	M.	54	Abdominal pain, vomiting, and occasional hæmatemesis for 4½ years	"	Yes	Free HCl
52	1903	Chronic gastric ulcer	M.	36	Occasional pain, vomiting, and hæmatemesis for 9 years; last attack 14 days before admission	—	—	—
54	1903	Hæmatemesis, vomiting, and pyrexia	F.	28	Epigastric pain and vomiting with occasional hæmatemesis for 2 years; exploratory gastrotomy 1 year ago at another hospital; nothing abnormal found; discharged as neurotic	No	No	—
57	1903	Chronic gastric ulcer	M.	45	Epigastric pain and vomiting with occasional hæmatemesis for 3 months	"	Yes	Free HCl
58	1903	Fibrous stricture of pylorus following chronic gastric ulcer	F.	25	Occasional vomiting and hæmatemesis for 2½ years	Small tender mass in epigastrium	"	Ditto
59	1904	Pyloric stenosis, chronic gastric ulcer	F.	57	Symptoms of gastric ulcer with vomiting and hæmatemesis for 12 years. ? Pyloroplasty 5 years ago. Nephropexy 2 years ago. R. c. of inguinal hernia 6 months ago. Symptoms not relieved	No	"	No free HCl, lactic acid present in large quantity
63	1904	Pyloric stenosis following chronic gastric ulcer	M.	46	Four months' history of abdominal pain, vomiting, and hæmatemesis	"	"	Free HCl and lactic acid
64	1904	Pyloric stenosis, hour-glass stomach	F.	41	Pain after food commenced when she was 14 years old, and lasted until she was 27. 7 years ago the pain commenced again, and 5 years later a perigastric abscess was drained, with but little relief	"	Yes, gastric peristalsis	No note

## for Benign Disease—continued.

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with silk sutures	Posterior	Died on 4th day	P.M.—General peritonitis. Anastomosis sound. No organic lesion of stomach or intestines found.
Ditto	Anterior	Uninterrupted recovery	Hard mass of cicatricial tissue round pylorus. No answer to letter of inquiry.
Ditto	Ditto	Death from shock 2 hours after operation	P.M.—Anastomosis sound and watertight. Three large ulcers round pylorus.
Ditto	Ditto	Vomited on 2nd, 3rd, and 4th days. Discharged relieved	No improvement. Frequent pain, vomiting, and hæmatemesis. Gastrolysis in 1905. Adhesions between stomach and abdominal wall attached to first scar. No relief. Gastrolysis again in 1906. No relief.
Ditto	Ditto	Uninterrupted recovery	Three years later writes: "Am now quite well and feel a different person. Can eat ordinary food, have no pain or vomiting, and have gained weight."
Ditto	Ditto	Ditto	Now, 3 years later, in service. Feels perfectly well, can eat any food, never vomits, and has gained 5 st. in weight.
Gastro-jejunostomy with silk sutures. Pylorus hard and united by firm adhesions to abdominal scar	Posterior	Left hospital on full diet with symptoms relieved	Two years later her doctor writes: "Stomach still greatly dilated; vomits daily; can only take liquids and soaked bread."
Gastro-jejunostomy with continuous silk sutures	Ditto	"Vicious circle." Frequent and copious vomiting until death on 7th day; gastric lavage without relief	P.M.—Chronic ulcer surrounding stenosed pyloric orifice. Base of ulcer adherent to pancreas. Mucous membrane along suture line of anastomosis greatly swollen and œdematous, and projected into cavity of stomach, completely obliterating the orifice. No fluid would pass through the anastomosis even under considerable water pressure.
Gastro-jejunostomy with silk sutures. Hard lump felt in region of pylorus	Anterior	Symptoms relieved	Writes 2 years later: "I still have slight pain after food, and occasionally vomit blood. Seldom eat meat. Have gained weight."

TABLE II.—*Gastro-enterostomy*

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumours.	Dilated stomach.	Free HCl.
67	1904	Pyloric stenosis due to muscular hypertrophy	F.	38	Treated in hospital for gastric ulcer on three occasions during past 3 years. Frequent attacks of pain, vomiting, and hæmatemesis. Attack commenced 10 days before admission	No	Slight	Ditto
68	1904	Pyloric stenosis following gastric ulcer	M.	34	Hæmatemesis 11 years ago, and dyspepsia since. Vomited blood twice, 8 weeks before operation	"	No	Ditto
69	1904	Chronic gastric ulcer, peripyloric abscess	M.	32	Pain and vomiting after food for 6 months. Never brought up blood	Inflammatory mass in right hypochondrium	"	—
70	1904	Chronic gastric ulcer	F.	29	Chronic dyspepsia with frequent attacks of vomiting and hæmatemesis for 10 years. Two severe hæmatemeses 8 weeks before admission	No epigastric hyperæsthesia	"	No note
71	1904	Pyloric stenosis, anastomosis, subsequent perforated jejunal ulcer	F.	36	Dyspepsia for 10 years with frequent attacks of vomiting and hæmatemesis. Suture of perforated gastric ulcer near pylorus 1 year ago. Quite well for 6 months, when pain and vomiting commenced again	—	Yes, marked	Ditto
71A	1904	Dyspepsia, ulcerative endocarditis	F.	22	Dyspepsia, epigastric pain, and vomiting for 4 years. Cœliotomy for supposed perforated gastric ulcer 8 days after admission. Nothing abnormal found	No	No	—

*for Benign Disease—continued.*

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with silk sutures	Anterior	Vicious circle. Frequent vomiting until death on 4th day	P.M.—No peritonitis. Anastomosis sound and watertight, and size of two-shilling piece. No note as to kinking. No evidence of recent or old ulceration in stomach or duodenum. Pylorus hypertrophied, thickened, and narrowed, only admitting tip of little finger.
Gastro-jejunostomy with silk sutures. Pylorus hard and thickened. No definite ulcers felt.	Ditto	Uninterrupted recovery	Writes 2 years and 4 months later: "Am now perfectly well. Can eat anything, and have reached normal weight. Have occasional attacks of dyspepsia with flatulence, but never vomit."
Incision and drainage of peripyloric abscess, followed 13 days later by gastro-jejunostomy	Ditto	Rapid recovery and relief of symptoms	No answer to letter of inquiry.
Gastro-jejunostomy with silk sutures. No dilatation; no ulcer felt. Entero-enterostomy 2 days later	Ditto	Vicious circle. Intestine found kinked at point of attachment. Copious vomiting ceased after second operation	Attacks commenced again 4 months later, and she brought up blood (over a pint) twice. Symptoms persisted for 5 months, when she was admitted and treated by rectal alimentation. Rapidly improved, and was able to leave hospital in a month. Two months later was again admitted with a similar attack, and again improved with rectal feeding. Since then she has suffered with dyspepsia, and lives on milk. Frequently vomits after food, but never brings up blood. Has lost 18 lb. in weight.
Gastro-jejunostomy with silk sutures	Ditto	Uninterrupted recovery. All symptoms relieved. Perforated jejunal ulcer successfully sutured 1 year later, and 10 months after that a second perforated jejunal ulcer was again successfully sutured	The ulcer was situated in the proximal portion of the jejunum 1½ inches from a perfect anastomosis. The second perforation was situated on anterior surface of jejunum midway between line of anastomosis and mesentery. Beyond perforation has been quite well since anastomosis.
Gastro-jejunostomy with silk sutures on 18th day	Ditto	Pneumonia, high temperature, and expectoration of offensive sputum. Died on 21st day	P.M.—No peritonitis. Anastomosis perfect. Stomach and intestines quite healthy. Gangrene of lung. Recent vegetations on mitral valve.

TABLE II.—*Gastro-enterostomy*

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.	Free HCl.
76	1905	Pyloric stenosis following chronic gastric ulcer	M.	37	Pain after food relieved by induction of vomiting for 20 years. Only brought up blood once, 4 years ago	No	Yes	Free HCl
77	1905	Pyloric stenosis	M.	44	Pain after food relieved by vomiting for 7 years. Hæmatemesis 2 years ago, worse during last 2 months	"	"	Ditto
78	1905	Chronic gastric ulcer	M.	31	Epigastric pain with no relation to food for 8 years. Hæmatemesis and melæna 2 years ago and 7 months ago	"	"	Ditto
79	1905	Chronic duodenal ulcer	M.	57	Indigestion since a youth. Severe dyspepsia for 5 years; the pain came on 2 hours after food, and was relieved by taking an emetic. Never brought up blood	"	"	Ditto
80	1905	Pyloric stenosis after perforated gastric ulcer	M.	50	Pain 2 hours after food for last 3 years. Ulcer perforated 11 hours before admission	—	—	—
82	1905	Pyloric stenosis, chronic gastric ulcer	M.	39	Frequent attacks of epigastric pain and vomiting for 10 years. Hæmatemesis several times 3 years ago, melæna 3 weeks ago	No	Yes	Free HCl
83	1905	Pyloric stenosis after HCl poisoning	M.	41	Accidentally took HCl 1 month ago. Frequent vomiting and pain after food during convalescence	"	"	—
84	1905	Chronic gastric ulcer	M.	53	Epigastric pain and frequent vomiting of large quantities for 5 months. No hæmatemesis	"	No	Free HCl
87	1905	Chronic gastric ulcer, hour-glass stomach	F.	29	Pain after food for 10 years. Unable to eat solids for years. Hæmatemesis 5 and 2 years ago	"	"	No

for Benign Disease—continued.

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with silk sutures	Anterior	Uninterrupted recovery	Writes 10 months later: "Now never suffer in any way, and am able to eat and enjoy food I have not dared to touch for 15 years."
"No loop." Gastro-jejunostomy with silk sutures; excision of redundant mucous membrane	Posterior	Ditto	Pylorus definitely thickened; scar of old ulcer visible. 17 months later reported himself as perfectly well, and gained 3 st. 3 lb. in weight.
Excision of ulcer; suture of stomach, and gastro-jejunostomy with continuous silk sutures	Ditto	Ditto	The ulcer was close to the pylorus, which was adherent to the liver. Writes 1 year later: "Can eat ordinary food, but have to be careful. I still have slight dyspepsia, but have not vomited or passed blood since the operation."
Gastro-jejunostomy with silk sutures	Anterior	Rapid recovery. Pain relieved by operation	Ulcer on posterior wall of first part of duodenum. No answer to letter of inquiry.
Suture of ulcer on anterior surface of stomach near pylorus. Gastro-jejunostomy with continuous silk sutures 1 month later	Ditto	Uninterrupted recovery	Writes 20 months later: "Am now perfectly well and can eat any food. Have not had any pain or vomiting since my operation."
Gastro-jejunostomy with continuous silk sutures	Ditto	Vomited large quantity of bile-stained fluid on 7th and 12th days; then rapidly recovered	Writes 10 months later: "Have vomited 3 times since leaving hospital, but otherwise am quite well. I can eat ordinary food, and have gained weight."
Finney's operation, gastro-duodenostomy with silk sutures, anastomosis covered with omental graft	—	Convalescence delayed by severe attack of bronchitis. Much relieved after operation	No answer to letter.
Gastro-enterostomy and entero-enterostomy with continuous silk sutures, excision of redundant mucous membrane	Posterior	Uninterrupted recovery	Writes 16 months later: "Still suffer with dyspepsia. Can only eat fish and light food. Vomit every morning shortly after breakfast. Losing weight rapidly." Now has a reducible ventral hernia through scar.
Gastro-jejunostomy near cardiac end, with continuous silk sutures	Anterior	Ditto	Old ulcer and surrounding adhesions at pylorus. Cicatricial band across middle of stomach. No answer to letter of inquiry.

TABLE II.—*Gastro-enterostomy*

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.	Free HCl.
88	1905	Chronic gastric ulcer	M.	32	Dyspepsia for 12 years. Hæmatemesis 2 months ago, since when he has frequently vomited 2 hours after food. Melæna 1 week ago after severe attack of pain and hæmatemesis. In medical ward 1 month without hæmatemesis	Tender	Slight	No note
89	1905	Chronic gastric ulcer, dilated stomach, gastric tetany	M.	35	Said to have had 3 attacks of appendicitis. Appendix abscess drained 6 months ago. Severe vomiting of large quantities of fluid 3 days before admission. Developed gastric tetany, which became very severe	No	Yes, peristalsis	Ditto
94	1905	Chronic gastric ulcer, hour-glass stomach	F.	30	Gastritis 12 years ago. Two attacks 5 years ago, and another 4 years ago. Similar attack with frequent vomiting 3 months ago. No hæmatemesis	"	Ditto	Ditto
96	1905	Chronic gastric ulcer, dilated stomach	F.	30	Dyspepsia and occasional hæmatemesis for 16 years. During last year has vomited daily after food. No melæna	"	Yes	Ditto
97	1905	Pyloric stenosis, chronic gastric ulcer	F.	34	Sudden pain and hæmatemesis 7 years ago. Since then occasional mild attacks, a few minutes to 2 hours after food	"	"	Ditto
98	1905	Chronic duodenal ulcer	F.	24	Dyspepsia and vomiting immediately after food for 8 years. No hæmatemesis or melæna. Attacks last about 2 weeks, and she is then better for 2 months	"	"	Ditto
99	1905	Pyloric stenosis, chronic gastric ulcer	M.	34	Epigastric pain, vomiting, hæmatemesis, and melæna 1 year ago. Recovery in 1 month. 5 months ago vomiting and pain commenced again, but without hæmorrhage	"	Yes, peristalsis	Ditto



## for Benign Disease—continued.

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with continuous silk sutures	Anterior	Uninterrupted recovery	Pylorus and first part of duodenum adherent to liver. No answer to letter of inquiry.
On day after admission gastro-jejunostomy with continuous silk sutures and entero-enterostomy with Murphy's button. 4 days later, as symptoms were not relieved, anterior gastro-jejunostomy nearer cardiac end of stomach than first anastomosis, and a second entero-enterostomy, both with Murphy's button	Posterior,	Death 3 days after second operation. After first operation, tetany continued, and vomiting of vicious circle type commenced. The stomach was greatly distended, and peristalsis was marked. Large quantity of brown fluid removed by syphonage. Stomach remained dilated after second operation	P.M.—First anastomosis $4\frac{1}{2}$ in. from pylorus and near great curvature, opening in small bowel 14 in. from pylorus. Gastro-jejunal orifice not constricted but plugged by cedematous mucous membrane. Second anastomosis patent. All joints sound. General peritonitis. Circular ulcer on posterior wall of stomach close to pylorus. Floor, size of a shilling, formed by pancreas. Slight constriction of pylorus.
Gastro-jejunostomy with silk sutures. Perigastric adhesions freed at subsequent exploration	Anterior	Great pain and occasional vomiting after operation. Died 5 weeks later	P.M.—Peritonitis. Ulcer on posterior wall of stomach perforated into pancreas and lesser sac. Anastomosis sound, but in pyloric portion of hour-glass stomach.
Gastro-jejunostomy with continuous silk sutures	Posterior	Uninterrupted recovery, and much relieved when discharged	Pylorus examined at operation and found normal. 18 months later: "Still suffers with dyspepsia, and can only take light diet. Has had several hæmatemeses
Ditto	Ditto	since operation. Treated by gastric lavage at another hospital until 6 months ago. For last 3 weeks has had severe pain and vomiting." Vomited once, 5 days after operation	Pylorus much thickened and surrounded with adhesions. Writes 18 months later: "Have gained solid food. Still suffer with pain, vomiting."
Ditto	Posterior	2 st. in weight, but rarely eat and have occasional attacks of vomiting. Uninterrupted recovery	Pylorus normal, duodenum thickened. Writes 18 months later: "Am now perfectly well, have gained weight, and can eat any food."
Ditto	Anterior	Ditto	Pylorus narrowed, thickened, and adherent to liver. Writes 17 months later: "Am now quite well, and can eat ordinary food."

TABLE II.—Gastro-enterostomy

No.	Year.	Disease.	Sex.	Age.	History.	Palpable tumour.	Dilated stomach.	Free HCl.
100	1905	Pyloric stenosis	F.	49	Acute epigastric pain for 2 years. Vomiting only commenced during last 8 months	No	Yes	No free HCl
101	1905	Gastroptosis, dilated stomach	M.	54	Epigastric pain and eructations for 10 years. Worse during last 6 months. Phthisis	—	Slight	Ditto
102	1905	Chronic gastric ulcer	F.	21	Pain and vomiting after food for 5 years. Two hæmatemeses within last 2 months	No	"	No note
105	1905	Pyloric obstruction	F.	47	Dyspepsia for 9 years. Hæmatemeses 5 years and 2 years ago. Vomiting four to six times daily for last 2 months	Nodular mass in epigastrium	Yes, gastric peristalsis	No free HCl
106	1905	Hour-glass stomach	F.	46	Hæmatemeses 6 years ago. Nephropexy in January, 1904. Gastric ulcer on anterior surface of stomach near cardia found adherent to liver, freed, and sutured in August, 1904. For last 12 months has suffered with frequent pain and vomiting after food. Unable to take solids	No	—	No note
107	1905	Chronic gastric ulcer	F.	21	Epigastric pain and vomiting for 1 year. Hæmatemeses on several occasions. Latterly has vomited about four times weekly, and brought up small quantities of blood. Lived on liquids for last 2 months	"	No	Ditto
108	1905	Pyloric stenosis after HCl poisoning	M.	42	Accidentally drank 1 gill of HCl 2 months ago. Three weeks later had severe attack of vomiting with hæmatemeses and mælena	"	Yes	No free HCl

for Benign Disease—continued.

Description of operation.	Anterior or posterior.	Result.	Remarks and P.M.
Gastro-jejunostomy with continuous silk sutures	Anterior	Uninterrupted recovery. Discharged from hospital much relieved	Pylorus thickened. No answer to letter of inquiry.
Ditto	Posterior	Pain relieved. Died of phthisis 6 months later	—
Ditto	Anterior	Uninterrupted recovery	Ulcer near pylorus. Writes 9 months later: "Am much better. Have not vomited since operation, can eat ordinary food, and have gained weight. Still have occasional attacks of dyspepsia."
Ditto	Ditto	Frequent vomiting before death on 9th day	P.M.—Peritonitis due to leakage from left extremity of anastomosis. Pyloric canal and antrum uniformly infiltrated with firm white material resembling growth (microscopically this proved to be inflammatory). No ulceration of mucous membrane.
Gastro-jejunostomy with continuous silk sutures. The transverse colon was found drawn up and adherent to anterior aspect of stomach, consequently the anastomosis, though anterior, had to be made through a hole in the transverse meso-colon. Entero-enterostomy 3 days later	Ditto	Vicious circle. Copious vomiting for 3 days, ceased after entero-enterostomy. Died 6 days after first operation	P.M.—Slight peritonitis below stomach on left side. Many coils of small intestine had passed through the hole in the transverse mesocolon. These were collapsed but not strangulated. Jejunum sharply kinked beyond anastomosis. All junctions sound. Water passed from stomach into proximal end of jejunum, and thence through entero-enterostomy into small intestine. Constricted part of stomach firmly bound to left lobe of liver by adhesions of almost cartilaginous density.
Gastro-jejunostomy with continuous silk sutures	Ditto	Died of streptococcic peritonitis 5 days later	P.M.—General peritonitis. Anastomosis sound and acted well. Chronic ulcer on posterior wall of stomach adherent to pancreas.
Ditto	Ditto	Died on 4th day	P.M.—General suppurative peritonitis. Gastro-jejunostomy sound and watertight. Cicatricial stricture at pylorus only admitted No. 8 catheter. No indication of corrosive action elsewhere.

*Chronic gastric ulcer.*—Eleven cases. Males 7, females 4. Cured 3. Relieved 3. No relief 2. Died 3. Mortality 27 per cent. Definite evidence of ulcer in 6. Hæmatemesis in 8.

Secondary operations for vicious circle were necessary in 2 cases, 1 of which, No. 89, was admitted with a severe attack of gastric tetany.

Anterior operation in 8. Posterior operation in 3. Immediate entero-enterostomy in 2 of the latter.

*Results of the anterior operation.*—Cured 2; relieved 2 no relief 2 (vicious circle in 1 of these); died 2.

*Results of the posterior operation.*—Cured 1; relieved 1; vicious circle, entero-enterostomy and death 1.

The results in this series are disappointing, for out of 6 cases which have been traced only 1, No. 57, can be regarded as absolutely cured. In this particular instance the presence of an ulcer, though doubtful, was highly probable as there was a history of frequent attacks of hæmatemesis.

No.	Site of ulcer.	Operation.	Result.	Secondary operation.	After-history.	Interval since operation.	Cause of death.
67* 78*	Doubtful Anterior near pylorus	Anterior with silk Posterior with silk after excision of ulcer	C. C.	— —	Now well Slight dyspepsia	3 years 1 year	— —
102* 84	Near pylorus Doubtful	Anterior with silk Posterior and immediate entero- enterostomy	C. R.	— —	Slight dyspepsia Still has dyspepsia and vomiting Not traced	9 months 16 months —	— — —
69	Near pylorus. Also peri-pyloric abscess	Anterior with silk 13 days after drainage of abscess	R.	—	Not traced	—	—
88*	Pylorus and duodenum	Anterior with silk	R.	—	Still has pain and vomiting. Hæma- temesis twice	—	—
70*	No ulcer felt	Anterior with silk	Vicious circle	Entero-ente- rostomy 2 days later.	Still has pain and vomiting. Hæma- temesis twice	21 months	—
96*	No ulcer felt	Anterior with silk	No relief	—	Still has pain and hæmatemesis	18 months	—
52* 89	Pylorus Posterior, adherent to pancreas	Anterior with silk Posterior and immediate entero- enterostomy with silk and Murphy button	D. Vicious circle	Anterior gastro- enterostomy and entero-ente- rostomy. Both with Murphy button on 4th day	— Died	2 hours 2 days	Shock. General peritonitis. All joints sound. First gastro-enterostomy plugged by oedematous mucous membrane, other openings patent. Streptococcic peritoni- tis. Anastomosis sound.
107*	Posterior, adherent to pancreas	Anterior with silk	D.	—	—	5 days	—

\* Hæmatemesis.

*Chronic Gastric Ulcer with Hour-glass Stomach.*

No.	Site of ulcer.	Operation.	Result.	Secondary operation.	After-history.	Interval since operation.	Cause of death.
21	Posterior surface of stomach at neck of hour-glass	Anterior into pyloric half of stomach	D.	—	—	2 days	Asthenia.
87	Pylorus. Cicatricial band across middle of stomach	Anterior into cardiac portion of stomach	C.	—	Not traced. Left hospital much relieved	—	—
94	Posterior wall	Anterior into pyloric half of stomach.	Pain and vomiting	Gastrolysis for adhesions	Died	5 weeks	Ulcer perforated into pancreas and lesser sac. Anastomosis sound.

In the above series 1 recovered and left the hospital much relieved whilst the other 2 died, and at the *post mortem* it was discovered that the anastomosis had been made in the distal portion of the stomach in each case. In No. 21 a local abscess due to perforation of the ulcer was first incised and drained with a resulting gastric fistula. The anastomosis effected three days later was followed by death in two days. The fact that in 2 out of 3 of these cases the anastomosis should have been made in the wrong half of the stomach points to the great difficulty experienced in recognising the "hour-glass" condition. This difficulty was increased by the presence of an active ulcer with surrounding adhesions which masked the anatomical landmarks and the pathological change.

*Hour-glass Stomach following Gastric Ulcer.*

CASE No 106.—Died. This is referred to in the Table of “vicious circle.”

*Dilated Stomach.*

Three cases. Cured 2. Died 1.

No.	Operation.	Result.	Interval since operation.	Cause of death.
101	Posterior	Much relieved	6 months	Died of phthisis.
26	Posterior	Died	6 days	Unknown. No P.M.
39	Anterior	Cured	4½ years	—

Though 1 of the 2 successful cases is noted as being only “much relieved,” the persistence of symptoms was doubtless due to advanced pulmonary tuberculosis. In this case the dilatation was associated with general viscerotosis, but in the others no apparent cause was found.

*Pyloric Stenosis.*

Twenty-two cases. Males 13. Females 9. Cured 11. Relieved 5. No relief 1. Died 5.

Stenosis due to (a). Chronic ulcer 15. Cured 7. Relieved 4. No relief 1. Died 3.

„ (b) After perforated gastric ulcer 3. All cured.

„ (c) HCl poisoning 3. Cured 1. Relieved 1. Died 1.

„ (d) Muscular hypertrophy 1. Died.

Cured 11. Anterior anastomosis 9. Posterior no loop 1. Finney 1.

Three of these were operated upon some time after successful suture of a perforated gastric ulcer, and 1 of them, No. 71, after an anterior anastomosis, was subsequently re-

*Table of Results of Operation for Pyloric Stenosis.*

No.	Operation.	Result.	After-history.	Interval since operation.	Remarks and cause of death.
51	Anterior with silk	C.	Left hospital well	—	Not traced.
48	"	C.	Now well	4 years	After perforated gastric ulcer.
58	"	C.	"	3 years	—
68	"	C.	"	2½ years	Perforated gastric ulcer sutured 1 year before anastomosis. Perforation and successful suture of two jejunal ulcers after anastomosis.
71	"	C.	"	2½ years	—
76	"	C.	"	10 months	—
77	Posterior "no loop"	C.	"	17 months	—
80	Anterior with silk	C.	"	20 months	After perforated gastric ulcer.
82	"	C.	"	10 months	—
88	Gastro-duodenostomy by Finney's method.	C.	"	14 months	After HCl poisoning.
99	Anterior with silk	C.	"	17 months	—
164	"	R.	Much relieved	6 months	Then readmitted with peritonitis due to perforated tuberculous ulcer of intestine. Died. Anastomosis perfect at P.-M.
42	"	R.	Not traced	—	After HCl.
64	"	R.	Still pain and occasionally vomits blood	2 years	Also hour-glass stomach.
97	"	R.	Gained weight, but still has pain and vomiting	18 months	—
100	"	R.	Not traced	—	—
59	Posterior with silk	O.	No better, can only take liquids	2 years	Previous pyloroplasty, R. nephropexy and R. C. of inguinal hernia.
16	Anterior with silk	D.	—	19 days	Peritonitis. Anastomosis sound and functional.
63	Posterior with silk	D.	Vicious circle	7 days	Edges of anastomosis swollen and oedematous, and completely obliterated orifice. Water could not be forced through under pressure.
67	Anterior with silk	D.	Vicious circle	4 days	Anastomosis sound. No note as to kinking. No peritonitis. Pyloric stenosis due to muscular hypertrophy.
105	"	D.	—	9 days	Peritonitis due to leakage at suture line.
108	"	D.	—	4 days	Following HCl poisoning. P.M.—General peritonitis, anastomosis sound.



admitted twice with a perforated jejunal ulcer, which was successfully sutured on each occasion.

Relieved 5. Anterior anastomosis 5.

Only 3 of these cases have been traced. One of them, No. 16A, was readmitted six months later and died of peritonitis due to perforation of a tuberculous ulcer. *Post-mortem* examination revealed distinct cicatricial narrowing of the pylorus.

No relief 1. Posterior anastomosis. Previous pyloroplasty and nephropexy.

The pylorus was adherent to the old abdominal scar and surrounded by adhesions, probably the result of the pyloroplasty. The continuation of symptoms at the present date suggests the probability of fresh adhesions.

Fatal 5. Anterior anastomosis 4, with 1 case of vicious circle. Posterior anastomosis and vicious circle 1.

*Cause of death.*—Collapse following vicious circle vomiting 2. Peritonitis 3, due to leakage at suture line 1.

The above table shows in a very striking way that gastro-enterostomy is an ideal operation for pyloric stenosis, for out of 22 cases no less than 11, or 50 per cent., were cured, and if the 5 fatal cases are excluded, the percentage of cures works out at nearly 65 per cent.

#### *Chronic Duodenal Ulcer.*

Two cases, Nos. 79 and 98, both cured.

No. 79.—Ulcer on posterior wall of first part of duodenum. Rapid recovery after anterior operation, and left hospital cured.

No. 98.—Thickening of first part of duodenum. Posterior operation. Quite well eighteen months later.

#### *Miscellaneous.*

Five cases are placed under this heading, viz. hæmatemesis and vomiting 2, hysterical vomiting 1, dyspepsia and ulcerative endocarditis 1, fibrous contraction of stomach after HCl poisoning 1. In the two former no demonstrable lesion of the stomach or pylorus was found, and in one of these, No. 54, an exploratory gastrotomy had been performed at another hospital, when nothing abnormal was detected.

No.	Condition.	Operation.	Result.	After-history.	Interval since operation.	Cause of death.
32	Hæmatemesis and vomiting	Anterior with silk	No relief	Hæmatemesis ceased, frequent vomiting. Not traced after 6 months	—	—
54	Ditto	Ditto	Ditto	Gastrolysis for adhesions twice. No improvement, symptoms continue.	3 years	—
44	Hysterical vomiting	Posterior with silk	Died	—	4 days	General peritonitis, anastomosis sound. No lesion of stomach or intestines found.
71A	Dyspepsia, ulcerative endocarditis	Anterior with silk 18 days after celiotomy for supposed perforated gastric ulcer	„	—	3 days	Gangrene of lung. Vegetations on mitral valve. No peritonitis.
33	Fibrous contraction of stomach after HCl poisoning.	Anterior with silk	Relieved	Not traced	—	—

*Vicious Circle.*

Vomiting of the so-called vicious circle type occurred in 8 of the 112 cases (7 per cent.). Some definite form of mechanical obstruction was present in 7 of these cases. The obstruction was caused by kinking of the bowel on the distal side of the anastomosis in 5, and by cedematous mucous membrane completely filling the orifice in 2. In all probability three factors enter into the production of this latter form of obstruction. (1) The continuous suture if drawn too tight is liable to produce puckering and infolding of the applied edges. (2) In applying the so-called muco-mucous suture, which really includes all the coats of the stomach and intestines, it is easily possible to insert the sutures at a greater distance from the cut edges than is absolutely necessary, consequently the second, or peritoneal, row of

No.	Condition.	Operation.	Interval.	Secondary Operation.	Interval.	Result.	Anatomy.
63	Pyloric stenosis	Posterior with continuous suture	—	Gastric lavage	7 days	D.	Mucous membrane along suture line greatly swollen and oedematous and projected into the stomach, completely filling the orifice of the anastomosis. Water could not be forced through even under considerable pressure.
67	"	Anterior with continuous suture	—	—	4 days	D.	Anastomosis sound and watertight, size of two-shilling piece. No note as to kinking. No peritonitis.
70	Chronic gastric ulcer	Ditto	2 days	Entero-enterostomy with silk sutures	—	C.	Distal loop of jejunum found kinked at point of attachment.
89	Chronic gastric ulcer, dilated stomach, tetany	Posterior with continuous suture and entero-stomy with Murphy button	4 days	Anterior gastro-jejunostomy and entero-enterostomy. All with Murphy button	3 days	D.	Orifice of first anastomosis completely blocked by oedematous mucous membrane. Second anastomosis patent. All joints sound. Peritonitis.
103	Hour-glass stomach	Anterior with silk sutures	3 days	Entero - enterostomy with silk sutures	3 days	D.	Transverse colon drawn up and adherent to anterior wall of stomach, consequently anastomosis, though anterior, had to be made through a hole in the transverse mesocolon. Many coils of intestine had passed through this hole. These, though collapsed, were not strangulated. Jejunum sharply kinked beyond anastomosis. Water passed from stomach into proximal part of jejunum, and thence <i>via</i> entero-enterostomy into small intestine.
47	Carcinoma of pylorus	Ditto	10 days	—	—	D.	Anastomosis situated above middle of greater curvature, and distal loop of jejunum kinked. Gastric contents could be squeezed into small bowel, but passed along loop towards duodenum, and could only be made to pass down jejunum by manipulation.
73	Ditto	Anterior with continuous suture	9 days	Entero - enterostomy	—	C.	Bowel dilated on duodenal side of anastomosis. Distal loop collapsed and kinked.
92	Carcinoma of pylorus and stomach	Ditto	2 days	Ditto	4 days	D.	Jejunum on distal side of anastomosis kinked and collapsed. At p.m. water passed from stomach down proximal loop of jejunum, and thence <i>via</i> entero-enterostomy into small bowel.

sutures may be half an inch or more from the margin of the opening. In this way a diaphragm is formed between the stomach and intestine, which would readily become swollen and œdematous through inflammation or venous obstruction. (3) This diaphragm formation is greatly assisted by the presence of redundant mucous membrane. This emphasises a most important detail in the operation of gastro-enterostomy, for by excising the mucous membrane, which projects beyond the cut edges of the peritoneum, the suturing is rendered easier, the coaption of the peritoneal surfaces is more accurate, and the opening between the stomach and intestine is actually larger.

### *Summary of Results.*

(1) Chronic gastric ulcer 11 ; 8 recovered, 3 died—shock 1, peritonitis 2.

(2) Hour-glass stomach 4 ; 1 recovered, 3 died—asthenia 1, vicious circle 1, perforation of ulcer after gastrolisis, 1.

(3) Dilated stomach 3 ; 2 recovered, 1 died—cause unknown.

(4) Pyloric stenosis 22 ; 17 recovered, 5 died—peritonitis 3, vicious circle 2.

(5) Chronic duodenal ulcer 2 ; both recovered.

(6) Hæmatemesis and vomiting 2 ; both recovered.

(7) Hysterical vomiting 1 ; died—peritonitis.

(8) Dyspepsia and endocarditis 1 ; died—gangrene of lungs.

(9) Contracted stomach 1 ; recovered.

In 33 cases of recovery final results are : no improvement 3, slight improvement 8, good result 15, not traced 7.

*Technique.*—The anterior operation was performed in 35 cases with 10 deaths. Silk sutures were employed in all. Three of these developed vicious circle vomiting, for which entero-enterostomy was performed in 2. Two of these vicious circle cases died, 1 from collapse (no secondary operation) and 1 from peritonitis following entero-enterostomy.

*Results of anterior operation.*—Cured 13, relieved 7, no relief 3, not traced 4, died 10, vicious circle 3.

*Cause of death in fatal cases.*—Peritonitis due to leakage at suture line 1, peritonitis due to perforation of chronic ulcer 1, peritonitis after secondary operation for vicious circle 2, post-operative peritonitis 2, asthenia 1, collapse following vicious circle 1, shock 1, gangrene of lung 1.

The posterior operation was performed in 11 cases, with 4 deaths, silk sutures were employed in all. Immediate entero-enterostomy 2, with 1 recovery and 1 death. The fatal case developed vicious circle vomiting due to œdematous mucous membrane and was operated on again, having an anterior gastro-jejuno-stomy and entero-enterostomy with Murphy buttons, performed.

*Results of posterior operation.*—Cured 3, relieved 3, no relief 1, vicious circle 2.

*Cause of death in fatal cases.*—Post-operative peritonitis 1, peritonitis following perforation of ulcer after gastrolisis 1, collapse following vicious circle due to œdematous mucous membrane 1, unknown 1.

Gastro-duodenostomy with silk sutures by Finney's method was adopted in one instance with good result.



# A STUDY OF THE VARIOUS CHANGES WHICH OCCUR IN THE TISSUES IN ACUTE DIPHThERITIC TOXÆMIA,<sup>1</sup>

MORE ESPECIALLY IN REFERENCE TO

“ACUTE CARDIAC FAILURE.”

---

By LEONARD S. DUDGEON, M.R.C.P. LOND.,

BACTERIOLOGIST TO ST. THOMAS'S HOSPITAL.

---

THE cost of this research was defrayed through the munificence of Lady Jenner, who has established a scholarship in Pathological Research, at St. Thomas's Hospital, in memory of her son, Louis Jenner, who was director of the first clinical laboratory in London. Nothing has been more gratifying to me than to have been able to carry out this investigation in the laboratory where, at one time, I had the advantage of being an assistant to my friend, Dr. Louis Jenner.

## INTRODUCTION.

At the suggestion of Dr. Foord Caiger, I have made an investigation of the various changes which occur in the viscera, nerves and muscles, in sixteen cases of acute diphtheritic toxæmia. A large amount of experimental work has also been done with the filtered toxins of the

<sup>1</sup> This paper has also been published in full, together with illustrations, in 'Brain' for June, 1906.

diphtheria bacillus. By comparing the results of the pathological investigations in the human cases with those which have been found in the inoculated animals I have been able to form a definite idea of the changes which occur.

Bristowe (5) examined the heart muscle in a case which was clinically malignant hæmorrhagic diphtheria, and found it to be extremely fatty, and the adrenal glands to be hæmorrhagic. The kidneys also showed fatty change. He mentioned that in his opinion the heart muscle is usually normal in diphtheria, but in this instance the fatty change was very well marked.

Flexner (7), in his valuable monograph on the pathology of the toxalbumin intoxications, remarks that fatty metamorphosis is one of the most common pathological conditions found in the myocardium in diphtheria. I can do no better than quote his own words: "For its detection we have employed the frozen section only. It was rarely absent, and was encountered, more especially in those cases which terminated fatally, within short periods following inoculation." He also draws attention to the swelling and elongation of the nuclei and alteration in their shape, the fibres in the meantime showing little change. As the changes in the nuclei become more marked the substance of the fibres has disappeared, or has taken on a swollen and attenuated aspect. Pathological alterations in the interstitial tissue were wanting. Vascular changes were noted.

The chief lesion of the adrenal gland was congestion and hæmorrhage. The medulla, more especially, was full of blood. Necrosis of the tissue cells, such as has been met with in the liver, with invasion of the necrotic areas with polymorphonuclear cells, was commonly found to be present.

Fatty metamorphosis of the liver cells was common.

The researches by Flexner were carried out with filtered sterile cultures of the bacillus of diphtheria, and cultures freed from bacteria which had been killed with chloroform.

These observations of Flexner's are of the utmost importance, and form a very considerable addition to our knowledge of this subject, but there is no doubt, however, that many valuable points concerned in diphtheritic toxæmia are omitted.



Vincent reported a case of heart paralysis in diphtheria in which the cardiac plexus showed an atrophy of nerve fibres and myelin sheaths. The pneumogastric nerve and medulla are said to have been normal (Flexner).

Müller (13) describes abundance of fat in the splenic pulp and follicles, and states that it is found to be most abundant in the neighbourhood of the necrotic foci met with in this viscus. He also refers to invasion of the tissues with polynuclear leucocytes.

Bezançon (2) refers to the cloudy swelling, parenchymatous degeneration and fatty change which have been found in the liver, especially in septic cases.

Stanley (17), in an interesting paper published in the 'British Medical Journal,' in 1903, states that in his opinion the prime factor for the cause of death in diphtheria and beri-beri is the cardiac muscle. He is most emphatic on this point. He says, "To attribute heart failure in beri-beri and diphtheria to a necrosis of the vagus is alike unnecessary, inadequate, and unproved." He, however, concludes this very important statement with some interesting remarks, to which I will refer again later. "In beri-beri and diphtheria the cardiac change is parenchymatous degeneration of the heart muscle." "Sometimes fatty degeneration only is seen and appears to be a later stage of the granular albuminous degeneration." "While the granular degeneration is usually general, the fatty degeneration is more often patchy."

He also adds that, "the heart muscle degeneration takes place as a rule before skeletal muscle degeneration, and is the result probably of direct action of the toxin, and not a secondary result of nerve change."

Hamilton Wright (20), however, adopts quite a different view to explain the cause of rapid death which occurs in acute beri-beri. He says: "In acute pernicious beri-beri the vagal cardiac terminations bear the brunt of the poison, and this, together with poisoning of the accelerator termination, soon leads to cardiac exhaustion and death." He, however, mentions that the muscle fibres of the heart in acute beri-beri are found to be extremely fatty, especially on the right side and in the papillary muscle.

Poynton (15) investigated the heart muscle in eighteen cases of rheumatic cardiac disease, four cases of diphtheria, one of chorea, and the heart muscle of a rabbit in which septicæmia had been produced by means of "staphylococci."

He gives a typical example of each disease to illustrate the most important points.

Thus in a child, aged 5, who died on the seventeenth day of disease from progressive cardiac failure, he found the following changes: The transverse striation of the heart muscle was lost in many places, while some of the fibres showed very marked longitudinal striation. Irregular fatty change occurred throughout the cardiac muscle; some of the fat droplets were of very large size. The muscle nuclei showed abnormal staining reactions, and there was some increase of the cellular elements in the interstitial tissue. The pericardium was not inflamed.

In a boy, of 19 years of age, who died rapidly in a third attack of rheumatic fever, some acute pericarditis was found at the autopsy, together with acute endocarditis of the aortic valve and chronic mitral disease. Here extreme fatty change was observed throughout the cardiac muscle. Some interstitial inflammation was present, as was only to be expected.

The heart muscle of the rabbit, which had died from "staphylococcic pyæmia" on the sixth day of illness, showed foci of inflammation throughout its substance, and definite patchy fatty changes.

The heart muscle was also examined in a case of chorea, and early fatty change was noticed in some of the fibres.

Villy (18) examined the stomach in fifteen cases of diphtheria, and found fatty degeneration of the gland cells to be a well-marked feature. In some examples the fatty change affected the whole of the glandular tissue, in other instances it appeared to be more patchy in character. The cases from which the affected stomachs were obtained had been fed during the last few days of life by nutrient enemata. Collections of leucocytes in the mucosa and submucosa, chiefly of the lymphocyte variety, were a constant feature. Fatty change in the heart muscle was also found to be present in his cases, so that this investigator arrived at the

conclusion that the cause of the vomiting in diphtheria and the cardiac failure depended upon the microscopical changes found in the stomach wall and heart muscle.

Millard and Regaud (12), from a series of experimental investigations on diphtheritic toxæmia in animals, found that leucocytes are present in large numbers in the interstitial tissue of the various viscera; that the foci of fatty degeneration which occur are composed of leucocytes; that the leucocytes absorb the muscular *débris* and especially the exudates, and that the muscular lesion provokes the leucocytosis.

Andrewes (1) states that: "The muscular tissue of the heart may be in a condition of fatty degeneration which varies to a greater or less degree, but is frequently absent." He also mentions that the cardiac muscle may present advanced fatty change affecting all the fibres, or it may be patchy in character. He considers that the diphtheritic toxins are especially nerve poisons. It should be stated, however, that Andrewes maintains that, in cases of cardiac syncope, the cause of the condition is due to a direct action of the toxin on the cardiac muscle.

Gee (1), in his clinical description of diphtheria in Allbutt's 'Medicine,' says: "The cause of the heart failure is interstitial myocarditis with granular and hyaline degeneration of the muscular fibres."

Mott (1), referring to fatty degeneration, says: "From a large experience in the examination of hearts, I am certain that fatty degeneration may be overlooked unless a microscopical examination be made after staining with osmic acid. Thus, in a case of fatal syncope occurring in diphtheritic paralysis, I found the organ extremely degenerated; yet the heart had been passed as normal on macroscopical examination." "I have observed intense fatty degeneration of the heart in a case of diphtheritic paralysis, but I could find no degeneration of the nerve trunks."

Romberg (16) examined the heart muscle in eight fatal cases of diphtheria, in five of which there was *pericarditis*, and in three *endocarditis*. Patchy change was found scattered throughout the cardiac muscle. Central vacuolation of the individual fibre was also noted. The most marked fatty

change was noticed in the fibres beneath the endo- and peri-cardium. Interstitial inflammation was constantly present.

Hesse (8) made an examination of twenty-nine cases of diphtheria, in twenty-five of which interstitial myocarditis was present, and in four it was well marked. The change was noticeable in the first week, and more pronounced later. Leucocytic infiltration was believed to be due to escape of the leucocytes into the tissues, owing to injury of the capillary walls by the toxin.

Papkow (quoted by Welch and Schamberg [6]) found extensive fragmentation of the muscle fibres as early as the third and fourth days.

Councilman, Mallory, and Pearce (6) found fatty degeneration, varying in extent, in thirty-six out of the sixty cases examined, but only forty of these were recent cases, and of this number twenty-nine showed fatty degeneration. In some instances the fatty change was diffuse, in others of the patchy type. It appeared to accompany or precede the more advanced forms of degeneration which lead to complete destruction of the muscular tissue. The muscular elements became swollen, broken and converted into hyaline masses. Vacuolation, fragmentation and fracture of the degenerated fibres were often seen. Proliferation of the cells of the interior of the blood-vessels was found throughout the body. Two kinds of interstitial change were also noted:—(1) Local collection of plasma and lymphoid cells. (2) Interstitial change, secondary to muscle degeneration, which may lead to fibrosis.

These observers also state that when fatty degeneration of the heart is present, similar changes will be found in the skeletal muscle. They failed to find any gross lesion in the adrenal gland.

Welch and Flexner (19) found congestion, hæmorrhage, and focal necrosis in experimental diphtheria, but not in the human subject.

Marked parenchymatous degeneration of the muscle fibres of the heart, finally passing into a stage of fatty metamorphosis, may occur. The muscle fibres are degenerated, nuclei are broken down or have disappeared, and the fibres them-

selves cease to be continuous. These alterations are very marked in the late stages; in the cases which terminate most rapidly only slight parenchymatous changes are apparent.

Sidney Martin (10) published the first of his well-known papers on diphtheritic toxæmia in 1891, in which he dealt with the chemical pathology of this difficult subject. The albumose which he isolated from the tissues in fatal cases of diphtheria and injected into rabbits, was found to produce no effect on the liver, kidneys, spleen, and adrenals. Muscle and nerve degeneration occurred. The heart muscle was in a state of fatty degeneration. A few degenerated fibres were present in the vagus in those experimental animals which died during a period varying from seven to eleven days.

Two rabbits received large doses of the albumose, and were killed in 115 days and 94 days respectively. In each instance the heart muscle was very fatty.

He also reports two cases of diphtheria of which he had made a careful pathological investigation.

CASE 1.—Child, æt. 5, died at the end of the fifth day of disease from diphtheria. The heart muscle was normal and diaphragm likewise.

*Right phrenic:* Myelin was broken up and in a few fibres the axis cylinders were ruptured.

CASE 2.—Boy, æt. 19, died from diphtheria on the twenty-seventh day of disease.

*Heart-muscle:* Few fibres showed fatty change.

*Diaphragm:* Some fibres showed marked fatty change, some were only slightly affected, and many were normal.

The right vastus, internus and externus, and similar muscles on the left side showed scattered fatty change.

The palatal muscles presented a similar appearance.

Nerves to vasti showed degenerative changes, and the phrenics were found to be abnormal.

An animal was killed on the twenty-fourth day subsequent to its receiving a dose of the organic acid, isolated from the diphtheritic toxin by Sidney Martin. The heart muscle showed well-marked fatty change, and the diaphragm also to some extent. The phrenics were normal.

Martin, therefore, concluded from his results that the bacillus of diphtheria forms, both in the body and in culture media, proteid products of the same chemical nature as those found in patients dead from diphtheria—an albumose and an organic acid.

In a second report, published in 1892-1893, Sidney Martin (11) stated that all experimental animals which had been injected with the albumose and organic acid show well-marked degeneration of the cardiac muscle, and it was found in rabbits 94 and 115 days after a single injection of the albumose. He considered that the poison acted directly on the cardiac muscle.

This report also contained the result of the examination of three cases of syncope with cardiac failure.

CASE 1.—Laryngeal diphtheria. The *heart muscle* showed diffuse fatty change.

CASE 2.—Pharyngeal diphtheria. Diffuse fatty change present in the heart muscle.

CASE 3.—Diphtheria. Every fibre of the heart muscle showed marked fatty change. Transverse striation was completely lost.

Finally, he says, "The conclusions to be borne in mind, therefore, are that the signs of cardiac failure in diphtheria are due to a direct effect of the diphtheria poison on the cardiac muscle, and that the fatal syncope which not unfrequently occurs is essentially cardiac in origin."

Brewer, of the Homerton Fever Hospital, quoted by Bolton (3), found in thirty-nine consecutive cases of acute diphtheria excessive fatty degeneration in every instance. He also examined eight cases which died late in the disease, and showed that fatty degeneration is much less likely to be seen in these cases than in the acute stages, but that the interstitial changes are liable to be found.

Rabit and Phillippe, also quoted by Bolton (3) in 1891, examined five fatal cases of diphtheria, and found fatty degeneration of the myocardium in the acute stage, but did not consider it to be the cause of recognisable heart symptoms. They believe that the cases die of pure toxæmia,

while heart failure during the convalescent stage is due to patchy interstitial myocarditis.

In 1891 Bolton (4) made an exhaustive examination of the neuro-mechanism of the heart in eleven fatal cases of diphtheria. In all instances he found acute degenerative changes in the medulla oblongata, both the sensory and motor nucleus of the vagus being affected. The change apparently begins round the nucleus of the cell in which there is evidence of chromatolysis. This process spreads in every direction throughout the cell, and finally affects the dendrites; later stages are seen in which the whole cell is finely granular and has only a single layer of Nissl bodies arranged around the periphery. At this period the nucleus looks swollen and is usually excentric. At a still later stage there is a further change in the position of the nucleus, which now appears on one side of the wall of the cell, and frequently causes a local bulging of this wall as if it were about to be extended.

In all the eleven cases there was extensive fatty degeneration of the heart. The vagus nerve was normal in every example. Bolton considers that death in acute diphtheria is due to primary heart failure, which can be accounted for by the extensive fatty change which is found in the heart-muscle and the acute degeneration in the motor nucleus of the vagus. He considers that in the less toxic cases fatty degeneration of the cardiac muscle is absent, but that many fibres show cloudy swelling, although, as a whole, these fibres are very small in number in comparison with the normal fibres. The degree of degeneration in the medulla runs *pari passu* with that in the heart and all the acute degenerative changes which occur within the first few days of the disease.

#### TECHNIQUE.

*Histology.*—I will first describe in detail the methods which I have employed in every instance for the purpose of identifying fat in the tissues. The portion of tissue to be examined was placed as soon as possible after death in 10 per cent. formalin in normal salt solution for twenty-four hours, and (2) then in running water for twenty-four hours,

and (3) followed by gum arabic for twenty-four hours. The tissue was then cut by the frozen method and the sections were floated out on warm water, and, after a short time, placed in small bottles containing a filtered (just before use) saturated solution of Scharlach R. in 75 per cent. alcohol for twenty-four hours. They were then washed for a few seconds in 70 per cent. alcohol and then in water, and finally mounted in Farrant. In every instance one section of each portion of tissue was counter-stained in Mayer's hæmalum.

Sudan III was also employed as a fat stain in a similar way to Scharlach R., but the results obtained by the latter method were preferred. It has been recommended by some histologists to stain the sections for ten to twenty minutes in warm Scharlach R. or Sudan III, but I have found this method to be useless for the delicate work such as has been required in the present line of research.

G. Herxheimer recommends a solution of Scharlach R. in alkaline alcohol, or an alcoholic acetone solution. I have given a full trial to the former method, but found it to be extremely unsatisfactory. It acts very well for the coarse fat droplets which give the characteristic feature to adipose tissue, but is of little use for the fine fatty changes met with in diphtheritic toxæmia. It is claimed by Herxheimer that both these methods are rapid; that may be so, but rapid methods which produce negative results are not of much use, and that is my experience of the rapid methods recommended for demonstrating fat in tissues.

Paraffin sections were made in many instances of the viscera both of the infected animals and also of the children who died from diphtheria, and were stained in various ways. Van Gieson's method was found to be the most valuable stain for observing the various changes which may occur in muscle which has been subjected to the action of this powerful toxin.

Busch's modification of the Marchi method was employed for the examination of the heart muscle, diaphragm, vagus, and phrenic nerves. A 1 per cent. and a 0.3 per cent. solution of osmic acid were employed for the same purpose.

In the case of the vagus and phrenic nerves, small pieces were taken from various portions of the nerves along the



whole of their course, including the terminable portion. These pieces were placed in Busch's fluid frequently changed for about ten days, and teased preparations were then made and mounted in Farrant.

Portions of the brain were examined by Nissl's method as used in the pathological department at Queen's Square, and also with Leishman's stain employed in various ways.

*The toxin.*—The diphtheritic toxin which was used in these experiments was obtained from Dr. Cartwright Wood, to whom I am greatly obliged. Virulent and attenuated toxin were employed—but perhaps the most satisfactory results were obtained with the toxin which had been attenuated with anti-toxin. In a few instances in which a large dose of the virulent toxin had been given, more especially intravenously, the animal died without showing some of the more important changes met with under less severe conditions.

#### A SUMMARY OF THE MICROSCOPICAL APPEARANCES IN ACUTE DIPHTHERITIC TOXÆMIA.

It has long been known that the extra-cellular toxins of the bacillus of diphtheria are capable of producing extensive microscopical changes in various portions of the body, more especially in the heart muscle. This subject has been carefully dealt with by various investigators, but, without doubt, the most valuable papers which have yet appeared on the cardiac changes in diphtheritic toxæmia have been contributed by Dr. Bolton. It is surprising that although so much work has been done on this subject, yet in the standard books on medicine there is little or no reference to those contributions to which I have just previously referred.

There is little doubt that the most important group of symptoms which occur in diphtheria are those which are described as "cardiac paralysis." Most of the previous workers on this subject have studied the changes either in the cardiac muscle, the vagus nerve, or in the vagus nucleus in the medulla, while in only a few instances investigations have been made of the tissues throughout the body. It is probably owing to this fact that the term "cardiac paralysis" has been invented.

As I have already stated, the diphtheritic toxins show a special affinity for the cells of the heart muscle, which undergo degenerative changes and in which fat droplets accumulate, hence the popular term—fatty degeneration. Bolton has shown that this may occur as early as the third day of disease.

As far as I am aware, all previous investigators on this subject have studied the fatty changes which are produced by these toxins by employing osmic acid. I have used, as already mentioned, Scharlach R. and Sudan III for this purpose as well as osmic acid and Busch's modification of the Marchi method. There is not the slightest question that for demonstrating these acute fatty changes the red stains are decidedly preferable.

It has been previously mentioned that the fatty changes which are produced in the heart muscle by this toxin have been demonstrated in the human subject as early as the third day. The earliest record among my cases was on the fourth day of disease, and in this instance fatty change in the heart muscle was extremely well shown. In the animal experiments, however, it occurred within *sixteen hours*. In many instances the entire portions of the cardiac muscle which were examined showed diffuse fatty change. In some instances it was more scattered than diffuse, more especially in the hearts of the inoculated animals. The fine fatty change to which I have referred often required very careful examination with the  $\frac{1}{15}$ th oil immersion before it could be detected, and there is no doubt that in such cases it is advisable not to use a counter-stain, such as hæmalum, but to rely entirely on the fat stain. In a few of the diphtheritic hearts the fatty change which occurred might be described as belonging to the coarse and medium type. In such examples the fat-droplets in the muscle cells were of very large dimensions. I was not able in any instance to detect any difference in the microscopical appearances in the various regions of the heart muscle, as some observers have previously noted. In osmic acid preparations the fatty change was never as well marked as in specimens stained by Scharlach R., while Busch's method was often found to be useless. Granular change was noted in some instances both in the human and

experimental cases, but one must be careful to distinguish the normal granularity of the heart muscle, which is a very marked feature, from that which may be regarded as a distinct pathological condition. The muscle cells in which the fatty change could be demonstrated were in some instances very degenerated, while in other examples they appeared to be normal. All intermediate forms between these two extremes were met with. The usual type of degeneration of the cells of the cardiac muscle was as follows: There was loss of transverse striation, but longitudinal striation more or less well shown; the cell nucleus either swollen and distorted, or, in some instances, shrunken or completely absent; the cell itself was irregular in shape, while in the most severe cases the entire cell presented a homogeneous appearance. These changes occurred either in cells in which a fatty change could be demonstrated or otherwise. Fragmentation and segmentation were found in some instances, chiefly in the human cases. Vacuolation of the muscle cells was occasionally seen.

Although these diphtheritic hearts show histologically such a very marked fatty change, yet, macroscopically, there is little to detect beyond the fact that they are usually soft and flabby. This fact only shows that it is often impossible to give an accurate opinion of the changes which may be present in the tissues without microscopical evidence.

I have failed to find fatty change in the heart muscle in the fourteen control cases of patients dying from various diseases which I examined (see appendix), except in the muscle fibres immediately underlying the inflamed pericardium in cases of pericarditis, and in an example of very rapid death from poisoning by oxalic acid in a woman *æt.* 40. In this case there was an extensive diffuse fatty change present throughout the cardiac muscle resembling the most acute example of diphtheritic toxæmia.

Fat droplets were present, chiefly of the fine type. The muscle fibres appeared to be in good condition, but in a few instances, the nuclei stained poorly, and the transverse striation was lost. A few cells were completely degenerated.

Well-marked inflammatory reaction of the heart muscle has been noted by the large majority of investigators on this

subject, as previously stated. Romberg (16) drew special attention to this feature, but considering that in five out of eight cases pericarditis was found at the autopsy, and in the remainder endocarditis, we must look for some cause other than the diphtheritic toxin for the production of the inflammatory lesions which occurred in his cases.

It is a matter of common knowledge that inflammation of the heart muscle is found, without exception, in all cases of pericarditis and endocarditis, but in diphtheria inflammation of the serous membranes is uncommon.

Hesse (8) also draws special attention to the interstitial myocarditis which he found in his cases.

Flexner (7) is one of the few observers who failed to find any evidence of inflammation of the heart muscle in diphtheritic toxæmia.

In the large majority of my own cases, both the experimental and those in the human subject, there was complete absence of inflammatory processes. In a few instances, however, very slight inflammatory changes were noted. We must be fully alive to the fact that, while the earlier observers considered that diphtheria was a true toxæmia, more recent experience tends to show that in the very acute cases this disease must often be classed as a septicæmia. In such instances the presence of phagocytes in the diseased tissues in which the bacilli are present is only what takes place in every bacterial infection, but in all my *experimental cases* bacterial free toxins were employed, and there was complete absence of inflammatory reaction—as already mentioned—except at the seat of inoculation.

In conclusion, it may be justly said that there are two typical forms of fatty change of the cardiac muscle in acute toxæmia—(a) diffuse and fine fatty change; (b) scattered fatty change, showing fine, medium, and coarse droplets.

### *Diaphragm.*

Dr. Caiger tells me that he has never noticed weakness or paralysis of the diaphragm in the *very acute* stages of diphtheritic toxæmia. It is quite evident, therefore, that the action of the diaphragm during the acute stage of the disease is apparently normal.

There is no reference in the literature to the pathological condition of the diaphragm during this acute period of the infection. I have found during this investigation that this muscle shows the acute degenerative changes before the heart muscle, and in some instances diffuse fatty change may occur while the cardiac muscle is apparently normal. This fact in itself serves to prove the most important point in diphtheritic toxæmia, that the toxins act directly on the heart muscle and diaphragm.

In a guinea-pig injected with the diphtheritic toxin, fatty change was detected in the diaphragm within *four hours* from the time of inoculation, that is to say, before any other change had occurred beyond the congestion of the suprarenal glands.

(1) One c.c. of diphtheritic toxin was injected subcutaneously into a guinea-pig, and the animal was killed in *four hours*. Suprarenal gland appeared macroscopically to be healthy.

*Diaphragm.*—Very fine fatty change present in a few of the fibres, nothing else abnormal detected.

*Heart muscle.*—Normal.

*Adrenal gland.*—This viscus was found to be extremely congested, but the fatty change was almost entirely limited to the cortex.

(2) One c.c. of diphtheritic toxin was injected into the right leg of a guinea-pig, and the animal was killed in *six hours*. Suprarenal gland was congested.

*Heart muscle.*—Normal.

*Diaphragm.*—Fine fat droplets scattered in an irregular manner in the muscular bundles of the diaphragm. No other changes detected.

*Adrenal gland.*—Abundant evidence of fat in the cortical portion of the gland, and to a less extent in the medulla.

(3) One c.c. of diphtheritic toxin was injected into the right leg of a guinea-pig, and the animal was killed in *eight hours*.

*Heart.*—Normal.

*Pancreas.*—Normal.

*Intercostal muscles.*—Normal.

*Abdominal muscles.*—Normal.

*Spleen.*—Normal.

*Diaphragm.*—Diffuse fatty change present throughout the muscular tissue. Both fine and medium-sized fat droplets are present. The transverse striation is well marked in some of the fibres, in others absent or deficient. No inflammatory reaction observed.

*Liver.*—Extreme fatty change present, especially at the periphery of the cells, and between the hepatic cells.

*Phrenic nerve.*—Normal.

*Suprarenal gland.*—Cortical portion shows marked fatty change, also present to a less extent in the medulla.

(4) Similar proceedings taken as in the experiment previously referred to, but only 0.5 c.c. of toxin was injected. Animal was killed at the end of eight hours.

*Phrenic and vagus nerves.*—Normal.

*Diaphragm.*—Very severe fatty change present in most of the fibres; both fine and medium-sized fat droplets present. Some of the muscular bundles appear to consist of little more than fat. No inflammatory reaction observed. Transverse striation in many of the fibres absent, in others feeble, in some it appears to be normal.

*Heart muscle.*—Normal.

*Intercostal muscles.*—Normal.

*Spleen and pancreas.*—Normal.

*Kidneys.*—Very slight fatty change present in the tubular epithelium.

*Liver.*—Hepatic cells show abundant cloudy swelling. Very marked fatty change present in the hepatic cells, and also between the liver cells.

*Suprarenal gland.*—Extensive fatty change present in the cortical portion and also existing throughout the medullary region of the gland.

In the account of the four experiments which are quoted here, marked changes in the muscle were found as early as four, six, and eight hours. The common type of fatty change consisted of very fine fat droplets distributed in patches throughout the muscle fibres. Diffuse fatty change such as occurs in some instances in the heart muscle was never seen, and coarse fat droplets were completely absent. The muscle cells otherwise showed similar degenerative changes to those already described as occurring in the heart muscle.

Inflammatory reaction was present in the case of a child which died with an empyema complicating diphtheria. In this instance there was acute inflammation of the diaphragm immediately beneath the infected pleura. It is quite obvious that the inflammatory reaction was due to the micro-organisms which produced the empyema, and was in no way related to the diphtheritic toxins, as some observers would have us believe.

#### *Skeletal Muscles.*

None of the *skeletal muscles*—either in the human or experimental cases—ever showed fatty change. Parenchymatous and granular degeneration were found in some instances.

*The leg-muscles* of the rabbits and guinea-pigs, at the seat of inoculation, presented every variety of degenerative change, except that there was no microscopical evidence of fat.

The inflammatory reaction, here, was extremely well marked. Phagocytes were collected in large numbers among the degenerated muscle fibres. There is no need to credit the diphtheritic toxins with the whole of this reaction. It is well-known that the injection of normal saline will determine the production of large numbers of phagocytes at the seat of inoculation, but as the injection of the diphtheritic toxin consists not only of the toxins themselves, but also of blood-serum and broth, there are many factors to account for the inflammatory changes which are produced. It seems likely that the toxins themselves, occurring in a concentrated form, produce necrosis and inflammation of the muscle fibres at the seat of inoculation and degenerative changes elsewhere. It is quite certain, however, that necrosis and inflammation occur at the seat of inoculation and that fatty degeneration is found in more distant parts. I have made a bacteriological examination of the inflamed leg muscles at the seat of inoculation and have recovered the white staphylococcus, but not in a sufficient number of instances to be able to arrive at a definite conclusion.

#### *Stomach and intestines.*

I have failed to demonstrate any fatty change in the involuntary muscles of the stomach or intestines either in the human or experimental cases. I made a very careful examination of the stomach wall in guinea-pigs because *acute dilatation* of this viscus is extremely well shown in these animals, which rapidly succumb to the action of the toxin. Villey (18) attached considerable importance to the fatty change which he found in the mucous membrane, and to the round-celled infiltration of the mucosa and submucosa. The round cells formed definite masses in the stomach wall and the cells themselves resembled lymphocytes. When we consider that the fatty change was limited to the mucous coat of the stomach and that the description which is given

of the round-celled infiltration accurately corresponds to the normal histological characters of the stomach-wall, it is difficult to understand how it would be possible for the changes described by Villey to be in any way related to the vomiting of diphtheria as he has suggested. If the toxins of the bacillus of diphtheria produced an inflammatory reaction such as Villey has described, we should find that the cells present in the inflammatory areas would be the finely granular polynuclear cells, and not cells resembling lymphocytes. This is conclusive evidence that the areas of round-celled infiltration previously referred to are in no way related to the diphtheritic toxin.

#### *Bladder.*

No abnormal changes were observed either in the human or experimental cases.

#### *Tongue.*

No fatty change was noted in the muscular substance of the tongue in the experimental cases, while in the human cases it was not examined for.

#### *Spleen.*

Slight fatty change was detected in a few instances, but it was never well marked. Foci of necrosis with areas of inflammation such as were described by Flexner were never seen.

#### *Pancreas, Thyroid, Thymus, and Lymphatic Glands.*

Nothing abnormal was detected. It does not appear to be sufficiently recognised that all the blood glands normally contain a good quantity of fat which varies even in the normal gland according to the age of the patient or animal.

#### *Kidneys.*

In some instances fatty change was extremely well shown, in most cases it was present to some extent. The fatty change was best observed in the epithelium of the convoluted



tubules, but none of the renal epithelium was exempt. Congestion of the kidneys was a prominent feature both in the human and experimental cases. Pathological changes in the vessel walls were not observed. The kidneys were very carefully examined for areas of inflammation, more especially in those instances in which albumen had been found in the urine during life, but in no instance was any inflammatory reaction detected. Other varieties of degenerative changes were also seen in the renal epithelium.

### *Liver.*

This viscus seemed especially prone to suffer from the effects of the diphtheritic toxin. In one case the hepatic tissue consisted of little more than fat droplets, while in most instances fatty change was well marked. In the experimental cases the fat droplets were especially prominent in the areas surrounding the hepatic veins. It was also found that the peripheral portion of each cell showed fatty change which was absent or only present to a slight extent in the central region. In some instances the hepatic cells were shrunken and distorted, and the outline of each cell was indistinct or the cells showed degenerative changes. I never noticed any area of inflammation or foci of necrosis.

### *Adrenal Gland.*

The most characteristic lesion produced by the diphtheritic toxins in guinea-pigs is congestion of the adrenal gland. The change can be detected in these animals at the end of four hours after receiving an injection of the toxin, while in later cases the congestion becomes more marked, and finally, the gland may consist of little more than blood. This condition has been commented upon by most of the previous workers on this subject. Perhaps the most important fact to be noted is that adrenal congestion is always present in these experimental cases; it is surprising, therefore, that it is not more common in the human subject, but one is rather inclined to the view that adrenal hæmorrhage is distinctly rare in diphtheria in children. There is no doubt that adrenal congestion is much more

difficult to detect in children than in guinea-pigs, because of the comparative ease with which abnormal coloration of this gland can be observed in these animals. There is one other point to remember, however, that in guinea-pigs which have received antitoxin immediately following the injection of the toxin, adrenal congestion is generally either slight or absent, although the animals may have rapidly succumbed to the disease. This fact may afford some explanation of the rarity of adrenal hæmorrhage in children. In one of my cases the right gland was hæmorrhagic, but there was also a right-sided empyema in this case, which detracts somewhat from the importance of the observation.

It is usually stated in books on histology that the adrenal gland contains some fat which is practically limited to the outer layer of the cortex. I have now examined a very large number of apparently normal suprarenal glands, both in man and animals, and have been struck by the large amount of fat which is present both in the cortical cells and in the connective tissue framework. In the medulla, however, it is absent. In guinea-pigs which have succumbed to the action of the diphtheritic toxin the entire cortex of the adrenal glands appears to consist of fat. Every cell which can be defined is filled with fat droplets. Throughout the medulla there are also large areas of fat present. In the glands obtained from children which have succumbed to diphtheria a similar condition is found to be present. It is probable that this circumstance (degeneration of the medullary portion) may afford an additional explanation to account for the severe depression of the entire circulatory system in acute diphtheritic toxæmia. It is hardly necessary to add that hæmorrhages and congestion are very obvious in most instances. It appears, therefore, that the suprarenal gland is one of the viscera which the diphtheritic toxin is especially prone to attack and to produce severe pathological changes in it.

#### *Costal Cartilage.*

It is generally supposed that cartilage plays a passive part in septicæmic and toxæmic conditions. I examined

the rib cartilage of several guinea-pigs which had succumbed to the action of the diphtheritic toxin, and the cartilages of several control animals. It is well known that the large cells in costal cartilage contain fat. In the toxæmic guinea-pigs, however, the fatty change was most striking. Each cartilage cell contained numerous large and small fat droplets. This abnormal feature was most marked in the large central cells, and only just present in the flattened cells at the extreme periphery. The cartilage cells of the control animals also contained fat, but *microscopically* the amount of fat present in the cartilage cells of the toxæmic animals was far greater than in the normal guinea-pigs. The fact that the diphtheritic toxin exerts its effect over portions of the body which previously had been thought to be exempt in all general infections, is a matter of considerable interest.

#### *The Blood.*

This was only examined for evidence of hæmolysis and for the presence of fat in the serum, as the condition of the blood in acute diphtheritic toxæmia is being investigated at the present time by Dr. Dean, at St. Thomas's Hospital. Rabbits which were dying from the effects of the toxin were examined, but the blood in all cases failed to show hæmolysis. Similar results were obtained in the human cases, but unfortunately I was unable to examine an example of acute hæmorrhagic diphtheria. No free fat was detected either by the naked eye in centrifugalised blood or microscopically in blood stained by Scharlach R. in either human or experimental cases.

#### *Pleural Fluid.*

The fluid present in the pleural sacs in the guinea-pigs which had died from the effects of the toxin was examined microscopically. Film preparations which were made and stained with Leishman's stain showed that the cells were chiefly endothelial cells, such as may occur in the pleural fluid in cases of cardiac failure in the human subject. This is further proof that the toxins do not, at any rate in the

early periods of infection, produce a general inflammatory reaction.

It is clearly shown from a consideration of the above facts that the diphtheritic toxin produces fatty change in various portions of the body, and that the changes found in the heart and diaphragm are similar to those in the adrenal gland and liver. If this is fully recognised, it will be obvious that it is an error to regard cardiac failure as anything beyond a group of symptoms dependent upon partial or complete loss of function in one viscus but similar, histologically, to that produced in many other situations, even although these may be unaccompanied by such characteristic clinical symptoms.

### *Brain.*

Various portions of the cortex and medulla of the brains of the inoculated rabbits and guinea-pigs were examined by Nissl's method, modified Leishman's method, and they were also stained by the ordinary methods. No abnormal changes were detected, and there was complete absence of congestion of the capillaries, which was such a noticeable feature elsewhere throughout the body. In no instance was the brain examined from any of the cases which died of diphtheria, as Bolton has definitely shown that changes do occur in the vagus nucleus in the medulla in acute diphtheria.

### *Phrenic and Vagus Nerves.*

In many examples these nerves were carefully examined along their entire course by teasing out portions which had been removed from various levels in the neck and thorax, both in the fatal cases of diphtheria and in the inoculated animals. I failed to detect any change in either nerve, even in the portions inserted into heart and diaphragm, in a single instance, in any of the rabbits or guinea-pigs.

Hamilton Wright (20), who strongly supports the nervous theory to account for the acute changes met with in acute beri-beri, has described certain alterations in the nuclei of the neurilemma which are the earliest changes to appear in the nerves, and are found some days before the true

Marchi reaction can be detected. To emphasise the views which Wright holds, I can do no better than quote his own words: "When we come to examine the nervous system of a fatal case of acute beri-beri, we find the true explanation of the disease." Then, again, "In acute pernicious beri-beri the vagal cardiac terminations bear the brunt of the poison, and this, together with poisoning of the accelerator terminations, soon leads to cardiac exhaustion and death." The very earliest changes in the nerves on which Wright has laid special emphasis are as follows: The termination of the neurons in the heart and as they pass through the deep cardiac plexus, show a change which is profound, but nevertheless it can only be regarded as pseudo-degeneration. The nuclei of the *neurilemma* and the surrounding protoplasm is blackened by the osmic acid. There are intensely black dots at the nodes and internodes, but the myelin has not undergone disintegration. Stanley, of Shanghai, as I have previously mentioned, holds an entirely opposite view to Hamilton Wright. He compares acute beri-beri to diphtheria, and attributes the cause of death in both diseases to the direct action of the poison on the heart-muscle. I have found in two of my cases of diphtheria changes in the nuclei of the *neurilemma* similar to those described by Hamilton Wright in acute beri-beri, but in both instances death occurred after a period of three weeks from the onset of the attack, and in one case the Marchi reaction was also present in both phrenic and vagus nerves. In both the acute and in the experimental cases I have failed to detect any changes in the vagus and phrenic nerves, and all previous workers on this subject appear to have obtained similar results. It is perhaps necessary to add, however, that the nuclei of the *neurilemma* of both these nerves in the acute cases of diphtheria were often very granular, but how far this is a pathological condition I am unable to say.

*The Effects of the Antitoxin in Modifying the Action of the Toxin.*

I was anxious to know how far the antitoxin modified the action of the toxins, specially on the heart muscle, so experiments were undertaken to investigate this point. Dr.

Caiger has also given me his opinion on this subject, which I will fully quote. It is as follows :

"I have no hesitation in saying that even in grave faucial attacks of diphtheria if antitoxin be given in adequate doses within the first forty-eight hours, a fatal issue during the acute phase of the throat illness is extremely rare, but in cases untreated with serum, or in which its administration has been delayed until marked putrefactive changes have commenced in the exudation, death is likely to occur with signs of profound toxæmia somewhere about the end of the first week, if not before. In cases, on the other hand, which have received full doses of antitoxin at an early date, the fatal issue, if not averted altogether, is in most instances delayed until the latter end of the second or third week, and occasionally even later. Under these circumstances the patient succumbs with symptoms which, taken collectively, may be best described by the term 'cardiac failure,' comprising persistent vomiting, feeble, rapid (occasionally slow), and irregular pulse, restlessness and anuria ; the gradually advancing depression of the heart's action culminating sooner or later in sudden fatal syncope.

"I much prefer the term 'cardiac failure' to 'cardiac paralysis,' since although degenerative changes have been found in the vagus and phrenics in some of these cases, it by no means follows that the fatty change in the cardiac muscle, which you have so clearly shown to be present from a very early stage of the attack, may not also be to a large extent responsible for this grave development. The fact that in those comparatively mild attacks in which the only evidence of cardiac depression is to be found in a temporary disproportion between the pulse rate and the temperature, usually attended with feebleness and marked irregularity of pulse (and they constitute the large majority of the cases), the signs are usually accompanied by more or less ventricular dilatation, is, I think, confirmatory of this view. Clinically, all gradations are seen between a condition of comparatively trivial functional disturbance of a temporary character, coming on during the second, third or fourth week of convalescence, and a complete and fatal depression of cardiac function."

In the case of one guinea-pig which received 160 times the minimum lethal dose of virulent toxin and also 2000 units of antitoxin at the same time, although the animal had been ill for a few days, its complete recovery ensued. It was killed twenty-five days later, but nothing abnormal was detected except for a slight fatty change in the adrenals.

*Microscopical Examination.*

Heart-muscle, liver, spleen, kidneys, diaphragm, pectoralis major, soleus muscle, vagus and phrenic nerves appeared to be perfectly normal.

*Suprarenal gland.*—Very marked fatty change present throughout the cortical and also present to a slight degree in the medullary portion of the gland.

This experiment affords an excellent illustration of what Dr. Caiger has stated, and when we consider the enormous dose of toxin which was administered, the result is most striking.

In most of these experiments in which antitoxin was administered, although death may have rapidly supervened, the toxins were found to have produced less effect than in those instances in which no antitoxin was given. Perhaps the most noticeable feature was the diminution of adrenal congestion in all but one experiment, by comparison with those in which the toxin alone had been administered. If the treatment by antitoxin is delayed until the animal is *in extremis*, then it will be found that little or no absorption takes place from the cellular tissue. This fact, no doubt, affords an additional explanation for the reason why antitoxin often completely fails to produce any beneficial effect.

These instances, in which the administration of antitoxin was found to counteract, to some extent, the action of the toxin, are given in full, as they serve to illustrate one of the most important points in this communication.

**EXPERIMENT 1.**— $\frac{1}{10}$  c.c. of attenuated diphtheria toxin was injected subcutaneously into a guinea-pig; 2000 units of antitoxin were given twenty-four hours later, while the animal was very ill. The heart became very rapid, and the animal died in four days from the commencement of the illness.

The suprarenal glands appeared to be healthy, but the heart-muscle seemed to be very soft. There was considerable hæmorrhagic œdema at the seat of the injection of the toxin.

*Microscopical examination:*

*Heart-muscle.*—Normal.

*Diaphragm*.—Well-marked fine and medium scattered fatty change present throughout the muscular tissue.

*Suprarenal*.—Marked fatty change found both in the cortex and in the medulla.

**EXPERIMENT 2.**— $\frac{1}{10}$  c.c. of attenuated diphtheritic toxin was injected into a guinea-pig; 2000 units of antitoxin were given twenty-four hours later. The animal died on the sixth day of the illness, from cardiac failure. There was no hæmorrhagic œdema at the seat of inoculation. The supra-renal glands were healthy.

*Microscopical examination:*

*Heart* (Scharlach E.).—Diffuse fatty change scattered throughout the heart-muscle.

*Diaphragm*.—Well-marked fine fatty change found throughout the muscular tissue.

*Intercostal muscles* appeared to be normal.

*Adrenal gland*.—Medullary portion practically normal, but a good deal of fatty change in the cortex.

*Kidneys*.—Slight fatty change detected in a few of the convoluted tubules, otherwise no changes in the kidneys observed.

*Rib cartilage*.—Fat found to be very abundant in the cartilage cells, especially in those towards the centre, while the outermost limit of cells hardly showed any fat.

**EXPERIMENT 3.**— $\frac{1}{10}$  c.c. of attenuated diphtheritic toxin was injected into the right leg of a guinea-pig; 2000 units of antitoxin were administered twenty-four hours later. The animal gradually improved and appeared to be perfectly healthy eight days subsequent to the injection of the toxin.

*Microscopical examination.* (The animal was killed under chloroform.)

*Heart muscle*.—Normal.

*Diaphragm*.—Very slight fatty change present in a very few of the muscular fibres, but otherwise nothing abnormal detected.

*Kidneys*.—Many of the convoluted tubules show fatty change in the epithelial cells, but otherwise the renal tissue appears to be perfectly normal.

*Adrenal gland*.—Extreme fatty change present, chiefly confined to the cortical cells, but also found throughout the medullary portion of the gland. Nothing else abnormal detected.

**EXPERIMENT 4.**— $\frac{1}{10}$  cc. of attenuated diphtheria toxin was injected into the right leg of a guinea-pig; 2000 units of antitoxin were given twenty-four hours later, but the animal was very ill at the time and died during the same night. The suprarenal gland was hæmorrhagic, and the heart-muscle was soft. There was considerable œdema at the seat of inoculation of the antitoxin, and it appeared doubtful if much of the antitoxin had been absorbed.

*Microscopical examination:*

*Diaphragm*—which was stained with Scharlach E., osmic acid, and with Busch's method—appeared to be normal.

*Heart muscle*.—Showed a very slight fine fatty change in a few of the fibres by all three methods which were employed in staining the diaphragm.



*Suprarenal gland.*—Fatty change extremely well marked both in the cortical and also in the medullary portion of the gland.

The pleuritic fluid was examined and the cells which were present were found to be almost entirely endothelial cells.

#### THE NATURE OF THE FATTY CHANGE.

When we consider the rapidity with which the diphtheritic toxins act, especially on tissues of such *vital* importance as the heart, diaphragm, adrenal gland, and medulla oblongata, it only shows the truth of Dr. Caiger's remarks and of the absolute necessity of giving the antitoxin immediately the clinical diagnosis is made. It is difficult to understand the action of the various drugs recommended for the treatment of cardiac failure when the histological characters of the heart-muscle in acute toxæmia are recalled. There is one direct line of treatment, and that is due to the immortal work of Professor Behring.

Although at the present day the term "Fatty Degeneration" has almost become obsolete, and has been replaced by "Fatty Change," yet it is probable that when we come to consider the question the original term is not so unscientific as one is led to believe. There does not appear to be any absolute proof that fat can be formed from proteid; it has been frequently stated to occur, but lacks confirmation. It has been shown that bacteria can break down proteid and set free fatty acid. Fresh cheese which yielded 2.16 gm. ether extract, after fourteen days' ripening yielded 4.3 gm. Windisch found the ether extract of Camembert cheese increased from 49.78 to 56.75 per cent. in the process of ripening. Because fungi have the power of forming fatty acids and fats out of proteid it does not prove that the same thing holds good for the cells of the animal body, but it at least renders it more probable (Leonard Hill). Other facts which give support to the view that fat can be formed from proteid are that glycogen can be formed from proteid, and that fat can be formed from carbohydrate. True experimental evidence of this physiological process, *i. e.* conversion of proteid into fat, has, therefore, yet to be produced.

It has long been known that a large amount of fat can be

demonstrated in the viscera in certain diseases by microscopical tests. It was this circumstance which led Virchow to believe that this change was due to the conversion of proteid (protoplasm) into fat. The liver in phosphorus poisoning was considered to be the best illustration of this remarkable change. Rosenfeld has shown, however, that the fatty change is not due to a fatty degeneration of protoplasm, but to a storage of food fat, and considers it a fatty infiltration. Rosenfeld has also proved that we must not rely entirely on the microscope in these investigations if we wish to obtain accurate results. It is now known that degenerated nerves contain less fat than normal nerves, although by microscopical tests alone one would expect the exact opposite. Rosenfeld proved that in a patch of yellow softening in the brain there was 6·17 per cent. fat, while normally in the same region he found 8·81 per cent. Physiologists have obtained 12·16 per cent. of fat in normal heart muscles. Dr. Leathes has found 11·0 per cent. in the normal diaphragm of the rabbit and 10·6 per cent. in the red muscles of the same animal, yet there is no evidence of fat microscopically. Leonard Hill (9) argues on these grounds "that microscopical evidences of fatty degeneration are utterly untrustworthy." No one would suggest that the microscope could be used as a means for estimating the amount of fat present in a diseased organ, but to my mind we can prove by the aid of the microscope that the tissues have lost their power of using up the fat which is normally present, and the very fact that fatty change can be demonstrated in the cells of the heart muscle is proof positive that these cells are in an abnormal condition, but that is as far as histologists can say. It is hardly possible, however, that the most ardent upholder of the value of physiological chemistry would deny the absolute importance of histological methods except for the true estimation of the amount of fat which is present. It must be pointed out that there are errors on the chemical side. It is absolutely impossible for any physiologist to give an accurate estimate of the fat present in the heart, diaphragm, etc., because there is always a large amount of fat present in the connective tissue which could not possibly be removed by hand while cleaning the muscle fibres, as it

cannot be seen except by the aid of the microscope. As in these areas fat droplets are much larger than any we ever see in degenerated heart muscle, the amount of fat which physiologists have stated to be present must be in excess of the correct estimate. If, however, the total estimate of fat in healthy viscera is simply given for comparison with diseased organs, then it would be *approximately* correct. In these experiments of mine the total quantity of fat present in the diseased and normal heart was made by Dr. Leathes. Dr. Leathes has kindly sent me the report of his investigation, which is given below.

"The hearts were washed free of blood and clots, and all above the auriculo-ventricular groove was cut away (*i. e.* auricles, valves, &c.); they were then dried with filter paper and weighed.

Six normal hearts . . . . . 7.38 g.

Six poisoned hearts . . . . . 12.42 g.

"They were then carefully cleansed from all visible epicardial and endocardial fat, coronary vessels and, in the case of the poisoned hearts, hæmorrhagic parts about the base of the ventricles were excised, which reduced the weight to 6.54 and 10.94 respectively. They were then dried and powdered.

Dry solids from 6.54 g. normal hearts	=	1,406 g.	=	21.49 per cent.
" 10.94 g. poisoned hearts	=	2,000 g.	=	18.27 "

"The dry powder was boiled with alcohol and extracted with chloroform in a soxhlet for six hours, and both processes repeated, as in Rosenfeld's method of fat estimation. The alcohol and chloroform extracts were taken up in ether, the ether solution filtered, evaporated, and dried at 105° C.

	Per cent. of fresh tissue.	Per cent. of dry tissue.
Ether extract from normal hearts, 0.2451	= 3.74	17.43
Ether extract from poisoned hearts, 0.3954	= 3.61	19.77

"These extracts were heated with alcoholic potash to saponify the fat, and then dissolved in a large volume of water; the solution acidified with sulphuric acid and kept hot till the insoluble fatty acids had completely separated to the top. These were then filtered off, dried on the filter, and dissolved by extracting the filter in a soxhlet with petroleum ether, and finally filtered, evaporated, and dried. As is always the case

with the heart and other organs, the ether extract obtained by Rosenfeld's method yielded considerably less insoluble higher fatty acids than true fat should theoretically yield.

	Per cent. of fresh tissue.	Per cent. of dry tissue.
Insoluble fatty acids from normal hearts, 0.1344	= 2.06	9.55
Insoluble fatty acids from poisoned hearts, 0.2440	= 2.23	12.20

"The surest index of the amount of fat in a tissue is obtained by the estimation of the fatty acids insoluble in water obtained by saponification of the ether extract. In this way we found that the normal hearts in which no fat can be detected histologically contained 80 per cent. of the amount present in the hearts which showed the most intense histological reaction for fat owing to the action of the toxin. It is clear that the increased amount of fat in the latter is not sufficient by itself to account for the difference in the histological reaction of the two sets of hearts. And the fact that as much as 10 per cent. of the total solids of the normal muscle is fat, and yet none of this fat microscopically is demonstrable, suggests that the real nature of the change set up by the poison consists in the setting free of fat, or some similarly simple compound of the fatty acids, from complex combinations in which these acids normally occur, and in which they are combined in such a way as not to react as they do in the simple fats. The myeline of a normal nerve contains complex compounds of fatty acids which, when fresh or fixed, do not betray their fatty nature. In a nerve that has degenerated as a result of section, these complex combinations break down and the fat reactions are then obtained, although in this case there is actually less fat in the degenerated nerve than in the healthy nerve from the other side of the body. It seems necessary to suppose that a similar change has occurred in the hearts that had been acted on by the toxin.

"It is true that such complex combinations of fatty acids have not been isolated from the heart muscle as they have from nerve tissue. But the normal heart tissue clearly contains a considerable amount of fat that is not histologically recognisable, and the most obvious inference is that it is not recognisable because the unsaturated valencies of the carbon

atoms in the oleic acid, to which the histological reactions of fat are due, are not free to react, any more than they are when fat is combined with galactose, cerebrines, etc., to form myeline.

"This unmasking of fat by the action of the toxin, however, will not account for any increase in the fat, as shown by analysis, and therefore does not account for the whole of the change. This increase, like that due to phosphorus poisoning, we must suppose to be due to an accumulation of imported fat. In every case that has hitherto been investigated in which the fat in a tissue is increased this increase has been shown to be composed of imported fat. And if there is an accumulation of imported fat, as a result of the action of the toxin, the most obvious inference in this case is that the fat has accumulated, not because more has been imported than should have been, but because the muscle-cells have been rendered by the toxin incapable of making use of the fat that is brought to them. The toxin has put a stop to the chemical change by which the fat is normally oxidised in the cell, and its action may, therefore, be regarded provisionally as an instance of anticatalytic action.

"The other changes which, according to the figures quoted here, appear to result from the action of the poison, are hypertrophic enlargement and an increase in the amount of water in the tissue. In the fresh condition the poisoned hearts were nearly 70 per cent. heavier than those from the normal animals; but the dry solids obtained from them were only about 40 per cent. heavier."—J. B. L.

#### SELECTION OF FAT STAINS.

There is one point to which I wish to refer, and that is to emphasise the superiority of Scharlach R. (azo-orthotoluol-azo- $\beta$ -naphthol) and Sudan III (azo-behzine-azo- $\beta$ -naphthol) over osmic acid. Mr. Shattock and others have done so previously, but in this research it was found to be most striking. Although all previous workers have employed osmic acid, and some have obtained excellent results, yet, if we study the literature carefully, there is obviously a degree of uncertainty about the results obtained with osmic acid in many instances. It is a matter of common knowledge that osmic acid will stain

"droplets" dark brown or green which are not really fat, and this may at times lead to considerable difficulty. The very fine fatty changes which were present in the heart muscle and diaphragm in some examples were not detected with osmic acid, although excellent results were obtained with Scharlach R. While in a few cases, although the very fine fat droplets were stained black, it required considerable care to demonstrate their presence in the tissues. Busch's method is excellent for the nervous system, but I found it to be of little or no value for acute fatty changes in the heart and diaphragm. I am unable to find a solitary point in favour of osmic acid or even to show its equality with the red stains for demonstrating acute fatty changes.

Doubt has been cast as to whether Scharlach R. and Sudan III do not stain substances other than fat, simply because it is possible to obtain results with them which cannot be obtained with osmic acid. It is impossible, however, at present to decide this point. I have made numerous investigations with these stains and the various fats and fatty acids and see no reason to doubt, at the present time, the value of the red stain.

#### SUMMARY OF MY OBSERVATIONS ON THE CHANGES PRODUCED IN THE TISSUES BY THE TOXINS OF THE BACILLUS OF DIPHTHERIA.

(a) That the most important lesion in the acute cases is a fatty change of the heart muscle and diaphragm, which is due to a direct action of the toxins on these tissues.

(b) That similar fatty changes may be found in certain of the important viscera, more especially the adrenal gland and liver.

(c) That the expression "cardiac paralysis" in acute diphtheritic toxæmia should be abolished and be replaced by "acute cardiac failure."

(d) That the changes found in the nervous system are secondary factors and not the primary cause of the cardiac failure.

(e) That the antitoxin, if given in sufficient quantity and *within the first forty-eight hours*, may prevent, or at any rate

will considerably diminish, the possibility of death from cardiac failure.

In conclusion, my thanks are due to large numbers of my friends for help and advice, but I must especially mention Dr. Foord Caiger. He suggested to me that I should undertake this investigation, he supplied me with the most valuable material, and he placed his vast clinical experience at my disposal. It is impossible for me, therefore, sufficiently to thank him for his invaluable help and kindly criticism. I have also to thank Dr. Sharkey, Dr. Acland, Dr. Hawkins, and Dr. Hector Mackenzie for permission to make use of their cases, Dr. Leathes for much valuable help, and Drs. Box, Harwood-Yarred, Mavrogordato, and H. R. Dean, for the trouble to which they have been put for my benefit on numerous occasions.

APPENDIX OF CERTAIN OF THE CASES, OTHER THAN DIPHTHERIA,  
WHICH HAVE BEEN USED FOR CONTROL PURPOSES.

CASE 1.—Suppurative spinal meningitis and myelitis.

*Microscopical examination:*

*Heart and diaphragm.*—Normal.

CASE 2.—Child, æt. 2, suffering from suppurative osteomyelitis, died after receiving a few whiffs of chloroform.

*Autopsy.*—Typical pyæmia. Suppurative pericarditis and myocarditis. The whole of the heart substance was riddled with diffusely spreading abscesses. The heart was sent to me by Dr. H. R. Dean.

*Microscopical examination:*

*Heart-muscle.*—Very extensive areas of inflammatory tissue present, also large clumps of Gram positive staphylococci. The muscle cells immediately beneath the *acutely inflamed* pericardium show some fine fatty change, but not elsewhere.

CASE 3.—Hypertrophy of the thymus gland in a young child, which was said to have died from lymphatism.

*Microscopical examination:*

*Heart muscle.*—Normal.

CASE 4.—Alcoholic neuritis. The vagus, phrenic and recurrent laryngeal nerves, also the heart and diaphragm, were taken for microscopical examination.

*Microscopical examination:*

*Heart, diaphragm, and crico-thyroid muscles.*—Normal.

*Vagus and phrenic nerves.*—Both nerves showed a well-marked Marchi reaction, both at the termination of the nerves in their respective muscles,

and also along the whole course of the nerves. The recurrent laryngeal nerve showed an extremely well-marked Marchi reaction.

**CASE 5.**—Alcoholic woman, who died of a perforated gastric ulcer. The heart, at the autopsy, was considered to be a typical example of fatty degeneration.

*Microscopical examination :*

*Heart.*—No fat present. Abundant central pigmentation of the muscle fibres. Fragmentation extremely well shown.

**CASE 6.**—Septic scarlet fever.

*Microscopical examination :*

*Heart.*—Normal.

*Diaphragm.*—Fatty change present to a high degree in a few of the fibres.

*Liver.*—Slight amount of fatty change present. All cells in good condition.

*Pectoralis major.*—Normal.

*Spleen.*—Normal.

*Adrenal gland.*—No fat observed in the medulla, but large amount present in the cortical portion of the gland.

**CASE 7.**—Septic scarlet fever.

*Microscopical examination :*

*Heart muscle* found to be normal.

**CASE 8.**—Case of measles, which was admitted to the hospital on February 16th, 1905, died March 7th. At the autopsy diffused broncho-pneumonia was found to be present.

*Microscopical examination :*

*Heart and diaphragm.*—No fatty change detected (Scharlach R.).

*Kidneys.*—Very marked swelling of the renal epithelium but no fatty change present.

*Suprarenal.*—No fat present in the medullary portion of the gland, but very abundant in the cortical region.

## ANALYSIS OF CASES OF DIPHTHERIA.

It will be most convenient if I give here a short account of the clinical aspect of every case which I have investigated, the treatment which was adopted, the result of the autopsy, and the microscopical appearance of each viscus which was examined. All the cases which were under the care of Dr. Caiger have been classified by him, while those in St. Thomas's Hospital have been arranged by me.

**CASE 1.**—A. P.—, æt. 4, was admitted on February 9th, 1905, to the South-Western Hospital under the care of Dr. Caiger, and died February 16th, 1905, on the eighth day of disease. The patient came under treatment on the second day of disease.

*Symptoms and physical signs.*—The pulse on the first four days was rapid, regular, and of fair volume and tension, while on the last three days the



pulse rate fell below normal, *reaching 40* on the day on which the child died. The heart sounds were muffled, there were no murmurs, and the apex beat was in the normal position. There was no diaphragmatic paralysis or weakness detected. The temperature varied from 100 to 101° F. The amount of urine was diminished, and contained about one tenth of albumen.

*Type of disease.*—Severe faucial attack. Hæmorrhagic.

*Treatment.*—The patient received 12,000 units of antitoxin on February 9th, 24,000 on February 10th, 12,000 on February 11th, and 18,000 on February 12th.

*Microscopical examination :*

*Heart muscle* (Scharlach E.).—Very diffuse fatty change. Fine and medium fat droplets in muscle fibres. A few of the muscle fibres show a coarse, fatty change. Marked congestion present (Busch). Practically no muscle fat seen with the low powers of the microscope, but very fine fatty change in the muscle fibres was detected with  $\frac{1}{4}$ th oil immersion. Transverse striation lost in many of the fibres. Vacuolation present. Some of the fibres show no nuclei, in others the nuclei are obviously swollen. Many of the fibres have no structure or shape, and appear to be homogeneous. No round cell change observed.

CASE 2.—A. E—, æt. 3½, was admitted to the South-Western Fever Hospital on February 27th, 1905, under the care of Dr. Caiger, and died on March 1st, on the ninth day of disease. Patient came under *treatment* on the sixth day of disease.

*Symptoms and physical signs.*—The pulse-rate was 132 and regular on February 27th, 57 on February 28th, 120 and small on March 1st. The cardiac action was feeble. The heart sounds were muffled, no murmurs were heard. The apex beat was outside the normal position. There was no diaphragmatic paralysis or weakness noticed. The amount of urine was considerably diminished, and contained  $\frac{1}{2}$  to  $\frac{1}{3}$  albumen.

*Type of disease.*—Very severe faucial attack, with marked involvement of kidneys.

*Treatment.*—24,000 units of antitoxin were given on February 27th, 12,000 on February 28th, and 12,000 on March 1st.

*Microscopical examination :*

*Heart* (Busch).—No fatty change detected in the heart muscle. (Scharlach R.): Very extensive fatty change in most of the fibres; fine, medium, and coarse types scattered profusely throughout most of the cells. Blood vessels very congested. No inflammatory change detected. Many of the muscle fibres had lost the transverse striation, and some showed no nuclei. Vacuolation well marked. Some of the cells were shrunken and distorted, while some appeared to be healthy and to stain well. It was the most marked instance of fatty change which I have seen.

CASE 3.—M. A—, æt. 6, was admitted to the South-Western Fever Hospital under the care of Dr. Caiger on March 15th, 1905, and died on March 15th, 1905, on the fourth day of disease. Patient came under *treatment* on the fourth day of disease.

*Symptoms and physical signs.*—Pulse 108, small and soft. Apex beat in normal position. Heart sounds muffled, but no murmurs heard. No urine obtained for examination. No hæmorrhages present.

*Type of disease.*—Very severe faucial attack.

*Treatment.*—No antitoxin given.

*Microscopical examination :*

*Heart* (Scharlach B.).—Marked fatty change scattered throughout the heart muscle. The fat droplets were found to be both of the fine and medium size. A heart muscle which had been previously treated with ether for three days gave no evidence of fat. (Busch): No evidence of fat detected. Transverse striation was found to be lost in many of the fibres, some longitudinal striation present. Muscle cells were distorted and shrunken, and showed irregular arrangement. Vacuolation very alight. No interstitial change detected.

CASE 4.—G. F., æt. 5, was admitted to the South-Western Fever Hospital under the care of Dr. Caiger, on May 27th, 1905, and died on June 12th on the nineteenth day of disease. Patient came under *treatment* on the fourth day of disease.

*Symptoms and physical signs.*—Pulse on admission good, gradually became rapid, more compressible, and thready. *Heart sounds*: A systolic murmur at the apex was heard on June 7th, but the apex beat was in the nipple line. On June 10th a to-and-fro murmur was heard at the apex; the impulse was wavy and feeble. No diaphragmatic paralysis or weakness was detected. Temperature varied from 98° F. to 102° F.

*Type of disease.*—Very severe faucial attack. Hæmorrhagic, with very obvious cardiac depression and dilation.

*Treatment.*—4000 units of anti-toxin were given before admission, 12,000 units were given on May 27th, 12,000 on May 28th, and 12,000 on May 29th.

*Microscopical examination :*

*Heart* (Scharlach E.).—Very extensive areas of coarse, medium, and fine fatty change found to be present, but more especially the coarse type. Scattered areas of very fine fat droplets present in the less obviously affected fibres. All stages of degeneration observed.

*Diaphragm.*—Very similar changes present to those already referred to in the heart muscle.

*Pectoralis major.*—Most fibres appeared to be normal; a few showed some hyaline change.

CASE 5.—E. M.— was admitted to the South-Western Fever Hospital, under the care of Dr. Caiger, on June 21st, 1905, and died on July 19th, on the thirtieth day of disease. Patient came under *treatment* on the second day of disease.

*Symptoms and physical signs.*—Pulse on day of admission was regular, and 96 per minute; it gradually became soft, small and more rapid. Cardiac condition normal on admission; reduplication of the second sound occurred at the apex on June 27th, and on June 29th there was marked cardiac depression, sighing, persistent, uncontrollable vomiting. Heart gradually became more dilated, the reduplication of the sounds became more marked, and the irregularity of the cardiac action increased. No diaphragmatic paralysis or weakness detected. There was evidence of renal involvement throughout the disease, accompanied by suppression towards the end.

*Type of disease.*—Severe faucial attack, accompanied by evidence of cardiac failure. No hæmorrhages seen.

*Treatment.*—12,000 units of antitoxin were given on June 21st, 12,000 on June 22nd, 12,000 on June 23rd, and 8,000 on June 24th.

*Autopsy.*—The heart muscle was found to be extremely soft.

*Microscopical examination :*

*Heart.*—Very fine fatty change scattered throughout most of the fibres, otherwise no alterations detected.

*Diaphragm.*—Normal.

*Liver.*—Fat found to be very abundant in the hepatic tissue, both coarse and median droplets, especially in the area of the hepatic veins.

*Phrenic nerve.*—Normal.

*Vagus nerve.*—Very marked granular change of the nuclei of the neurilemma and fine fatty change obtained. No Marchi reaction present.

*Suprarenal gland.*—Fat very abundant in the cortical portion and also in the medullary portion.

CASE 6.—W. M—, æt. 4½, was admitted to the South-Western Fever Hospital, under the care of Dr. Caiger, on July 31st, 1906, and died July 31st, on the fourth day of disease. Patient came under *treatment* on the fourth day of disease.

*Symptoms and physical signs.*—Child was admitted almost moribund, with very obvious cardiac depression. Pulse 135, and thready. Cardiac action extremely feeble and irregular.

*Type of disease.*—Very severe faucial attack. No hæmorrhages seen. Very large quantity of membrane present in the fauces, nose, and larynx.

*Microscopical examination :*

*Heart.*—Very fine, scattered, fatty change present throughout the heart muscle. Marked congestion present. No other abnormal changes detected.

*Diaphragm.*—Very diffuse, fine, and medium fatty change present throughout the muscular tissue. Some of the fibres had lost the transverse striation and appeared to be distinctly swollen, while the nuclei were enlarged and in some places had disappeared.

*Intercostal muscles.*—Normal.

*Pectoralis major.*—Normal.

*Spleen.*—Marked congestion present. No fatty change detected.

*Kidneys.*—Coarse fatty change present in the epithelial cells of the convoluted and straight tubules and in the outer margin of the glomeruli. Large amount of blood present in the capillaries of both kidneys.

*Liver.*—Very extensive fatty change present throughout the hepatic tissue. The fat globules were of all sizes, some of them reaching very large dimensions. Fat was also observed between the hepatic cells.

CASE 7.—F. S— was admitted to the South-Western Fever Hospital, under the care of Dr. Caiger, on December 18th, 1905, and died December 22nd, on the ninth day of disease. Patient came under *treatment* on the fifth day of disease.

*Symptoms and physical signs.*—Pulse rapid and irregular on December 18th. On December 21st pulse-rate 156, small and soft, and on December 22nd the pulse was imperceptible. Heart-beats were 140 to the minute. On December 20th there was evidence of cardiac dilatation and the heart sounds were feeble. This increased till the termination of the disease. There was persistent vomiting and partial suppression of urine on December 20th

with complete suppression on December 22nd. Faint trace of albumen on December 21st. Temperature varied from 97° to 101° F. There was no evidence of weakness or diaphragmatic paralysis.

*Type of disease.*—Very severe faucial attack, hæmorrhagic.

*Treatment.*—24,000 units of antitoxin were given on December 18th.

*Microscopical examination :*

*Heart.*—Diffuse fatty change present, both very fine and medium droplets scattered throughout the heart muscle. Vessel walls show no change. Heart muscle very congested. Marked degenerative changes in many of the fibres.

*Diaphragm.*—Slight but distinct fatty change scattered throughout the muscular substance. No fat observed in the osmic acid preparation.

*Pectoralis major* was found to be normal.

*Phrenic nerves.*—Teased preparations were made, but no fatty change was detected.

*Suprarenal gland* showed diffuse fatty change all through the glandular substance, but more especially in the cortical portion. With osmic acid only a very slight fatty change was detected.

CASE 8.—A. P—, æt. 2 years and 8 months, was admitted to St. Thomas's Hospital, under the care of Dr. Hector Mackenzie, on May 5th, 1905, and died May 5th, on the sixth day of disease.

*Symptoms and physical signs.*—On admission the child was cyanosed, and the fauces, palate, and tongue were covered with dirty grey membrane. Heart action was very rapid. Sounds were faint, but no murmurs were heard. Temperature 98° F.

*Type of disease.*—Very severe faucial attack, with marked cardiac depression.

*Treatment.*—2000 units of antitoxin were given on admission to the hospital.

*Autopsy.*—There was ulceration involving the whole of the pharynx, tonsils, soft palate, and naso-pharynx. The surface of the ulcers was gangrenous and covered with mucus. No membrane was visible. There was also ulceration on the lateral aspects of the œsophagus, just below the level of the cricoid cartilage. The diphtheria bacillus was found to be present on the surface of the ulcerated area. There was broncho-pneumonia throughout the right lung.

*Microscopical examination :*

*Heart (Scharlach R.).*—Very extensive granular and fatty change were scattered diffusely through the heart muscle. The outline of the muscle cells was indistinct. Some of the fibres had lost the nuclei and were shrunken. In some cases the nuclei were distended. The transverse striation is lost in some of the fibres. Very slight inflammatory reaction was present in the interstitial tissue.

CASE 9.—R. R—, æt. 4, was admitted on the fourth day of disease to St. Thomas's Hospital, under the care of Dr. Acland, on August 7th, and died August 7th.

*Symptoms and physical signs.*—The child was cyanosed on admission, breathing was stertorous and there was retraction of chest. The pulse was 170, and very irregular. Cardiac sounds were very feeble and muffled.

Temperature 100° F. On the right tonsil there was a piece of typical grey membrane in which diphtheria bacilli were present.

*Type of disease.*—Severe faucial attack, cardiac depression.

*Treatment.*—12,000 units of antitoxin were given.

*Autopsy.*—Diphtheritic membrane extended from the throat down the larynx and trachea. Nothing else was noted at the post-mortem examination.

*Microscopical examination:*

*Heart.*—Very diffuse fatty change present throughout the cardiac muscle. Both fine and medium sized fat droplets are present. Transverse striation remarkably distinct even in the fibres which show the most marked fatty change. No interstitial inflammation observed.

*Diaphragm.*—Similar changes present to those already referred to in the heart muscle.

*Leg muscle.*—Normal.

*Spleen.*—Normal.

*Liver.*—Very diffuse medium and coarse fat droplets present in most of the hepatic cells and also in the tissue between the cells.

*Suprarenal glands.*—Extreme fatty change both in the cortical and medullary portion of the gland. (Scharlach R. and Busch.)

*Phrenic and vagus nerves.*—Normal.

*Stomach and intestine.*—No fatty change detected.

*Bladder.*—Normal.

CASE 10.—R. M—, æt. 1 year and 9 months, admitted to St. Thomas's Hospital on August 20th, 1905, under the care of Dr. Hawkins, on the third day of disease, and died on August 21st, on the fourth day of disease.

*Symptoms and physical signs.*—Marked dyspnoea and retraction of ribs was noticed. Pulse 152. The heart was dilated. The sounds were irregular, but no murmurs were detected. Temperature varied from 99° to 102·6° F.

*Treatment.*—6000 units of antitoxin were given on August 20th.

*Autopsy.*—Typical membrane present in the upper air passages.

*Microscopical examination:*

*Heart, diaphragm, and abdominal muscles* are normal.

*Adrenal gland.*—Some fat present in the cortical portion of the gland, but medulla normal.

*Spleen.*—Very slight amount of scattered fat found to be present.

*Liver.*—Scattered fatty change in large droplets present throughout the hepatic substance.

CASE 11.—P. K—, æt. 1 year 3 months, was admitted to St. Thomas's Hospital on April 5th, 1905, on the fourth day of disease, and died April 23rd on the twenty-second day of disease.

*Symptoms and physical signs.*—There was marked cyanosis of the lips at the time of admission to the hospital and retraction of ribs. Temperature varied from 99° to 103° F. Diphtheria bacilli were found to be present in the nasal membrane.

*Treatment.*—8000 units of antitoxin were given.

*Autopsy.*—Miliary tuberculosis was found to be present in both lungs and in the spleen, and there was caseation of the bronchial glands. The heart was large and flabby.

*Microscopical examination :*

*Heart.*—Showed marked scattered, fatty change present throughout the muscular tissue. Fine and medium sized fat droplets present. The scattered areas of fatty change were extremely well shown, and in a few instances the droplets were distinctly coarse. Transverse striation was poor in the fibres which showed marked fatty change. Longitudinal striation was present in some of the fibres, while distinct granularity was observed in those fibres which did not show any fatty change. No fat detected by Busch's method.

CASE 12.—A. L—, st. 1 year and 2 months, was admitted to St. Thomas's Hospital on April 29th, 1905, under the care of Dr. Hector Mackenzie, on the first day of disease.

*Symptoms and physical signs.*—Diphtheritic membrane developed on both tonsils on April 29th, and diphtheritic bacilli were found to be present.

*Treatment.*—8000 units of antitoxin were given. The child was in the hospital at the time suffering from meningitis due to the *Staphylococcus albus*, and ultimately died from this affection.

*Microscopical examination :*

*Heart (Scharlach R.).*—No evidence of fatty change detected in the heart muscle.

CASE 13.—G. B—, st. 3 years and 9 months, was admitted on February 6th, 1905, and died on February 7th, on the fourth day of disease.

*Symptoms and physical signs.*—Severe cyanosis, with marked retraction of ribs, and severe dyspnoea, were present at the time of admission. Temperature 102° F., respiration 60, and pulse 132.

*Treatment.*—22,000 units of antitoxin were given on day of admission.

*Autopsy.*—Typical membrane extended through the larynx and bronchi, reaching to the finest terminations of the bronchial tree. Suprarenal glands were normal. Heart muscle was red and firm.

*Microscopical examination :*

*Heart muscle.*—No fatty change detected. (Scharlach R.) Some granularity of the fibres present. Capillaries very congested.

CASE 14.—E. L—, st. 3½, was admitted to St. Thomas's Hospital on January 17th, 1906, under the care of Dr. Sharkey, and died on January 24th.

*Symptoms and physical signs.*—On December 15th, 1905, the child developed measles and a sore throat, which she is supposed to have caught from another child in the same house. The illness subsided, and on December 20th she was allowed to get up for the first time. It was soon found, however, that there was marked weakness of the legs, which increased, while on January 5th she was found to see double, and there was an obvious squint, especially on the right side. Difficulty in swallowing occurred, and fluid food was returned through the nose. On January 12th there was marked muscular weakness, and knee-jerks were found to be absent. The heart appeared to be normal. The pulse rate was 116. A short while before death there was obvious diaphragmatic and cardiac paralysis.

*Autopsy.*—Nothing abnormal was detected.

*Microscopical examination :*

*Heart muscle.*—No fatty change detected. (Scharlach R., osmic acid, Busch.)

*Diaphragm.*—Very extensive fatty change present throughout the muscular substance.

*Intercostal muscles.*—Normal.

*Vagus nerve.*—Slight reaction present in the portion of the nerve at its entrance into the heart muscle.

*Phrenic nerve.*—Well-marked Marchi reaction present in the portion of the nerve entering the diaphragm, and also, but to a less extent, in the nerve at the upper level of the thorax. The nuclei of the neurilemma were enlarged and very granular, while a few of the granules stained black with osmic acid.

CASE 15.—A case of diphtheria which died forty-eight hours from the onset, *without* having received any *anti-toxin*.

*Microscopical examination :*

*Spleen.*—Showed slight amount of fat scattered through the glomeruli. Congestion very marked.

*Kidneys.*—Fatty change very well shown, chiefly in the convoluted tubules and in the straight tubules, but to a less extent. Glomeruli normal. The fat was limited to the outer zone of the affected cells.

*Bladder.*—Normal.

*Diaphragm.*—Scattered fine fatty change in some of the fibres, but not very marked. Otherwise the muscle fibres showed no change.

*Stomach and intestines.*—No fatty change present.

## APPENDIX OF CERTAIN EXPERIMENTS WITH DIPHTHERITIC TOXIN.

EXPERIMENT 1.—Fresh heart-muscle of a guinea-pig was placed in diphtheria toxin for forty-eight hours, at 37° C., under strict aseptic precautions. Sections were then stained with Scharlach R.

*Microscopical examination :*

*Heart muscle.*—No fatty change detected.

EXPERIMENT 2.—Heart muscle treated in similar way for seventy-two hours.

*Microscopical examination :*

*Heart muscle.*—No fatty change detected.

EXPERIMENT 3.—Heart muscle treated in similar way for ninety-six hours.

*Microscopical examination :*

*Heart muscle.*—No fatty change detected.

EXPERIMENT 5.— $\frac{1}{10}$  c.c. of diphtheria toxin injected subcutaneously into a guinea-pig. The animal died in twenty-four hours.

*Microscopical examination :*

*Heart.*—Very fine diffuse fatty change present.

*Diaphragm.*—Similar to heart.

*Leg muscle and intercostal muscles.*—Normal.

*Phrenic and vagus nerves.*—Normal.

*Rib cartilages.*—Fat very abundant in the central cells and gradually diminishing in amount towards the periphery.

*Adrenal*.—Very abundant fatty change in the cortex, slight, but distinct change in the medulla.

*Kidneys*.—Very marked fatty change detected in the convoluted tubules, but none observed in the glomeruli.

*Liver*.—Very marked fatty change present.

EXPERIMENT 6.— $\frac{1}{10}$  c.c. of diphtheria toxin was injected into the left leg of a guinea-pig. The animal died in fifteen hours.

*Microscopical examination* :

*Heart muscle*.—Very fine scattered fatty change found to be present. Very marked granular change observed in the muscle cells. Extensive congestion present. Nothing else abnormal detected.

*Leg-muscle*.—Extensive inflammatory reaction present at seat of inoculation.

*Diaphragm*.—Similar changes to those found in the heart muscle were noted, except that the fatty change was more scattered.

#### REFERENCES.

1. ALLBUTT and ROLLESTON, 'System of Medicine,' 2nd ed., vol. i, 1905.
2. GEE, SAMUEL, 'Diphtheria'; ANDREWES, F. W., 'Diphtheria'; MORT, F. W., 'Fatty Degeneration.'
3. BEZANÇON, "De la rate dans la diphtérie," 'Revue Mensuelle des Maladies de l'Enfance,' xiii, 1895.
4. BOLTON, CHARLES, "Primary Heart Failure as the Immediate Cause of Death in acute Diphtheritic Toxæmia," 'Lancet,' London, February 4th, 1905.
5. BOLTON, CHARLES, "Pathological Change in the Medulla Oblongata in Acute Diphtheritic Toxæmia," 'Archives of Neurology of the London County Asylums,' 1903.
6. BRISTOWE, J. S., "Cases of Diphtheria," 'Medical Times,' August 20th and 27th, 1859.
7. COUNCILMAN, MALLORY, and PEARCE. Quoted by WELCH, W. M., and SCHAMBERG, J., 'Acute Contagious Diseases,' 1905.
8. FLEXNER, SIMON, "The Pathology of Toxalbumin Intoxication," 'Johns Hopkins Hospital Reports,' vol. vi, 1897, p. 259.
9. HESSE, B., "Beiträge zur pathologischen Anatomie des Diphtherieherzens," 'Jahrbuch f. Kinderheilkunde u. physische Erziehung,' xxxvi, 1895.
10. HILL, LEONARD, 'Recent Advances in Physiology and Bio-Chemistry,' London, 1905.
11. MARTIN, SIDNEY. Loc. Gov. Board Reports, Supplement to Twenty-first 'Annual Report,' 1891-92.
12. MARTIN, SIDNEY. Loc. Gov. Board Reports, Supplement to Twenty-second 'Annual Report,' 1892-93.
13. MILLARD, J., et LE REGAUD, "Lésions de Myocarde dans l'intoxication Aigüe par la Toxine Diphtérique," 'Annales de l'Institut Pasteur,' February, 1897.



13. MÜLLER, "Beiträge zur Kenntniss der Histologie der acuten Milzschwellung," Inaug. Diss., Freiburg, 1890.

14. PARK, W. H., 'Twentieth Century Practice of Medicine,' vol. xvii, 1899.

15. POYNTON, F. J., "Cardiac Changes in Diphtheria and Rheumatic Fever," 'Lancet,' London, May 12th, 1900.

16. ROMBERG, "Ueber die Erkrankungen des Herzmuskels bei Typhus abdominalis, Scharlach und Diphtherie," 'Arbeiten a. d. Medicinischen Klinik zu Leipzig,' 1893, and 'Deutsches Archiv f. klin. Medicin,' 1891, xlviii.

17. STANLEY, ARTHUR, "On Sudden Heart Failure in Toxic Conditions," 'British Medical Journal,' December 26th, 1903.

18. VILLY, F., "Vomiting and Cardiac Failure in connection with Diphtheria," 'Medical Chronicle,' April-September, 1899.

19. WELCH and FLEXNER, "The Histological Changes in Experimental Diphtheria," 'Bulletin of Johns Hopkins Hospital,' ii, 1891, p. 107.

20. WRIGHT, HAMILTON, "An Outline of Acute Beri-beri and its Residual Paralysis," 'Review of Neurology and Psychiatry,' October, 1905.



# THE LESIONS WHICH RESULT FROM THE EXECUTION OF CRIMINALS.

BY EDRED M. CORNER, M.B.CANTAB., F.R.C.S.

---

IN the early days of anatomy and therapeutics the bodies of criminals, both dead and alive, were given by the judicial authorities of the Middle Ages to scientific men for examination and experimentation. This practice has been discontinued for many years, though it remained for some time a source of material to the anatomists. The execution of criminals in modern times has entirely replaced experimentation when considering the subject of fractures of the upper cervical vertebræ. The Government are very strict in preventing the publication of details of an execution, and consequently it is very difficult to obtain facts of the nature of the lesion. By means of the evidence of the Capital Sentences Committee, the examination of specimens in museums, and private communications, it has been possible to collect records of about forty cases. These are extremely interesting as they show the experimental production of the lesions already known to occur in the neck in other ways.

Of these forty cases, seven showed pure dislocation; twenty-four fracture with dislocation; and nine no trace of either fracture or dislocation. The fate of these last nine must be a matter of conjecture. Beyond the absence of lesion to the cervical spine, there is no reason to suspect that

the executioner had done his work badly and that death was due to strangling. Probably the execution was a kind of garotting, or, as is known, the spinal cord can be severed by the stretching of the ligaments without any bony lesion being present.

The distribution of the lesions can be tabulated easily :

Atlas . . . . .	Injured 4 times.
Axis . . . . .	„ 17 „
Third cervical vertebra . . . . .	„ 18 „
Fourth „ . . . . .	„ 6 „
Fifth „ . . . . .	„ 1 „

In fifteen cases the injury affected more than one vertebra. The third cervical vertebra was that most often broken, as Professor Alexander Macalister, of Cambridge, has suggested. The axis followed it very closely. So far as can be ascertained the axis was more frequently broken when the criminals had long necks, and the third cervical vertebra when they had short necks. The lesions of the axis were various, and depended on how the violence was applied. When it was direct, a transverse process was broken. When indirect, usually a lateral fracture of the axis, *i. e.*, through the pedicles, as happened in at least six cases where the fracture was sufficiently described, and in at least two the lower anterior part of the body of the axis was broken off. The odontoid process is practically never broken or dislocated as is popularly supposed. The lesion is always lower. Similarly, the atlas is uncommonly injured ; sometimes one of its transverse processes is broken by the knot on the rope, and once it was known to have undergone a unilateral rotatory dislocation from the twisting of the head.

In the modern method of hanging with the knot under the left ear, the bones are usually most broken on the left side, whilst the soft parts are most injured on the right. The fractures of the bones are usually bilateral, but are often incomplete on the right side.

With regard to injuries of the soft parts, the spinal cord is almost invariably severed, and there is reason to believe that it can occur, when there is no injury to bone, through stretching of the ligaments. This may have been the case

in the nine instances which showed neither fracture nor dislocation of the vertebræ. One or both vertebral arteries may be ruptured.

EVIDENCE AT THE CAPITAL SENTENCES COMMITTEE, 1886.

*Rev. Samuel Haughton, M.D.*

1. In one case the transverse processes of the second vertebra were broken across.

2. In another, there was complete separation between the second and the third cervical vertebræ. The spinal cord was completely severed. The axis sustained a fracture through its left pedicle at the margin of the superior articular facet, and another through the posterior arch of the canal for the vertebral artery, accompanied by displacement downwards of that side. The tip of the left transverse process was broken off also. On the right side there was an imperfect fracture or cracking of the pedicle at its junction with the superior articular facet.

In no case was the atlas hurt. I have collected all the particulars I could of a very large series of authentic cases, and in no instance was there any injury to the atlas. I might also add that I have only heard of one case where the odontoid process of the axis sustained fracture, and this was supposed not to be due to the direct violence caused by the drop; therefore it would appear quite erroneous to suppose that the odontoid process is frequently broken, or the transverse ligament ruptured. The seat of the injury is invariably below these structures.

3. In one case, whilst making an incision along the vertebral spines the finger ran suddenly into a cavity between two of the bones, which were discovered to be the third and fourth vertebræ. The tip of the transverse process of the left side of the axis was broken off. The posterior wall of the canal for the vertebral artery on the left side of the axis was also broken; the right side retained its integrity. The anterior tubercle of the transverse process of the third vertebra was also broken off on the left side, and the tips of

the transverse processes of the fourth on both sides were torn off.

4. In another case, there was a dislocation between two bones, the second and third cervical vertebræ. In all the cases that I have seen of dislocation, the dislocation was between these vertebræ, except in one case, where it was between the third and fourth, as has been described. In this case the transverse processes of the axis were torn through and separated on both sides, and also the same on both sides of the third vertebra; on the left sides the injury was greater than on the right.

5. In this case the dislocation was between the second and third cervical vertebræ; the axis had sustained a fracture through the canal for the vertebral artery on the left side; the tip of the transverse process was also separated; upon the right side the transverse process was broken off, but there was no fracture through the canal for the vertebral artery. The tips of the transverse processes of both sides were broken off. There were also fractures of the anterior arches of the canal for the vertebral artery on both sides.

The tips of the transverse processes of the fourth vertebræ were torn off.

*Dr. James Barr.*

The main dislocation was generally between the second and the third cervical vertebræ. He had seen fracture of the odontoid process (one case), fracture of the body of axis, fracture of the arch, etc.

*The Durham University College of Medicine Museum Catalogue.*

182. Fracture of the cervical spine from an old man who was executed by hanging. There is a complete fracture through the lower third of the body of the axis. When freshly examined the two portions of the bone found completely separated from each other on the left side, on the right side they were still connected by some threads of the capsular ligament and part of the membranes of the cord. The latter itself was completely severed.

† Male, æt. 67, height 5 ft. 4 in., weight 143 lbs. Hung with drop of 6 ft. 6 in.

183. Similar to 182. From a young man executed in exactly the same manner by hanging. The fracture was in exactly the same situation, but the two portions were completely separated one from the other. The cord with its membranes were totally severed.

Male, æt. 31, height 5 ft. 1½ in., weight 107 lbs., slight build. Hung with a drop of 8 ft.

The details of both the Durham cases were supplied me through the kindness of Mr. G. Grey Turner, of Newcastle.

*Anatomical Museum of the University of Edinburgh.*

Os. B. b. 2. The upper four cervical vertebræ of a Tamil, who was hanged in March, 1890. The drop was 8 ft. 6 in. The man's weight was estimated at about 140 lbs. The third vertebra was dislocated from the fourth, and both fractured through the left pedicle. The noose was under the left ear. Presented by Dr. Duncan Scott.

*St. Mary's Hospital Museum Catalogue.*

113. Fracture of the axis. The arch is separated from the body of the bone on each side by a fracture situated between the superior and inferior articular facets. From a criminal who was hanged. (A typical lateral fracture of the axis.) Presented by Mr. Edmund Owen.

*Judicial Series, un-catalogued, Trinity College, Dublin.*

1. Atlas, no lesion.

Axis. Left transverse process removed in such a manner as to leave intact the canal for the vertebral artery, except of a small portion near the junction of the posterior and the anterior root. The tubercle, with nearly the entire extent of the inferior aspect of the anterior and posterior roots was removed, the line of fracture obliquely upwards and outwards. The third and fourth vertebræ were fractured and separated from each other.

2. Atlas. The right transverse process had its anterior

root removed close to the lateral mass and again at the junction with the posterior root laying open the canal for the vertebral artery on its lateral aspect.

Axis. The right transverse process had its extremity broken off but not extending into the canal for the vertebral artery. The posterior root of the right transverse process broken from its junction with the pedicle and the inferior articular process. The anterior root of the transverse process was fractured at the junction of the superior articular process and the body, but still remaining adherent so far as union with the posterior root. The canal for the vertebral artery was opened on its lateral aspect. The third and fourth vertebræ were also fractured. Dislocation had taken place between the axis and the third vertebra.

3. Atlas, no fracture.

Axis. The left transverse process had been broken so as to open canal for the vertebral artery posteriorly. There was a fracture through the left pedicle close to the body, with a similar fracture of the right pedicle.

The third, fourth, and fifth vertebræ were also broken. Dislocation had taken place between the axis and the third vertebra.

4. Atlas, no fracture.

Axis. The transverse processes on both sides were broken off, but the fracture did not open the canal of the vertebral artery on either side. The right extremity of the spinous process was broken off by a line of fracture passing obliquely to the right. The inferior lip of the anterior surface of the body was broken more or less transversely involving more of the right than the left side.

The third vertebra was also fractured. Dislocation occurred between the axis and the third vertebra.

*Mr. Thorburn, of Manchester.*

1. This is one of Judicial execution, handed to me by a prison surgeon. The criminal weighed 128 lbs., and had a drop of 7 ft. 6 in. The specimen shows no fracture, but separation between the second and third cervical vertebræ, by traction, the vertebral vessels and anterior spinal liga-



ments, the cord itself and the anterior portion of the dura mater, are torn across. This specimen is at the Manchester Royal Infirmary.

2. This is an old specimen in the Museum of the Owens College. It is labelled "Judicial Execution." It consists of the first four vertebræ, the laminæ and centre of the posterior arch of the atlas having been removed (at the post-mortem examination). Describing the displacement as from below, the atlas is rotated to the left so that its right articular process is in front of its neighbour on the axis, and its left articular process is thrown back about one-sixteenth of an inch. On the right side, the articular processes are separated vertically by about three-sixteenths of an inch, and on the left by about one-sixteenth of an inch. There appears to be no fracture, nor is it clear from the old specimen how far the odontoid ligaments have been torn. This specimen was obtained for the Museum by Dr. Cullingworth.



# DUAL AND DISTINCT FRACTURES OF THE SPINE.

BY EDRED M. CORNER, M.B.CANTAB., F.R.C.S.

---

THE object of this communication is to draw attention to a class of spinal injury in which two separate and distinct lesions are produced by the action of the same violence. In a part which consists of many segments, like the spine, these dual and distinct fractures are more likely to occur than they are, for instance, in the femur. It seems that the injury to the spinal cord, when it occurs, does so at the level of the lower fracture, that is to say, of the fifth and sixth cervical vertebræ. The cases which form this new class exhibit so much uniformity in their characters that the group has been found to possess distinctive features, *e. g.*, the fractures are in the cervical region, both are always about the same situation, etc. It can be safely prophesied that these cases will be more numerous than this communication indicates; partly, because they are, and probably have been, easily overlooked, and partly, because they will be found in the necks of those who recover from the accident.

An examination of all the specimens and cases in the various Pathological Museums in the British Isles, and the descriptions in the literature, made for the conduct of an enquiry into the injuries of the upper cervical spines, has revealed a new and quite distinctive class of injury to which

the spine is liable. In another place complex or multiple fractures of the spine have been considered; in every one the broken vertebræ were contiguous.<sup>1</sup> But another variety may be recognised in which distinct fractures occur in two places, with some unharmed vertebræ in between. The results of violence applied to the spine, and fracturing it, at two places are not meant. *What is meant is that if violence is applied to the head, feet, or buttocks, and transmitted along the spinal column, it may lead to the fracture of the spine at two distinct places by indirect violence.* Thus, it is possible for one and the same accident to cause two lesions of the spine. An example of this is quoted from the catalogue of the Pathological Museum of St. Thomas's Hospital, in which there is an unilateral dislocation of the axis and fracture at the level of the fifth and sixth cervical vertebræ.

**CASE 1.—192.<sup>2</sup> Lower lesion.**—The intravertebral substance between the fifth and sixth cervical vertebræ is ruptured, with slight fracture of the anterior margin of the fifth.

**Upper lesion.**—There is a dislocation forward of the axis on the right side unaccompanied by fracture, the inferior articular process of the axis resting on the transverse process of the third cervical vertebræ. The spinal cord is apparently uninjured. (Presented by Benjamin Travers, Esq.)

In all, six cases have been found, two in museums and four in the literature. Three of the cases, those in the St. Thomas's Museum, London Hospital Museum, and in Mr. Miles' (of Edinburgh) private museum, have not been published previously. The five remaining cases are briefly reproduced as follows :

**CASE 2.—Fracture of the atlas, the odontoid process, and of the fifth cervical vertebra.** (South. 'Chelius,' London, p. 534. Quoted by Stephen Smith, 'American Journal of Medical Science,' October, 1891.)

<sup>1</sup> See paper on "The Regional Frequency of Fractures of the Spine" in this volume.

<sup>2</sup> This specimen being old has been removed from the museum since this was written.

A man fell down stairs. Paralysis, etc. Death on the fifth day.

*Post mortem.*—The atlas was broken in two places, one on each side, so that the line of fracture was diagonal and through the left vertebral foramen. The odontoid process of the axis was broken off with a part of the body. The fifth cervical vertebra had the body broken. The spinal cord was disorganised opposite the last fracture.

Death on the fifth day.

CASE 3.—*Forward dislocation of the atlas and fracture of the fifth, sixth, and seventh cervical vertebræ.* (David. 'Bulletin de la Société Anatomique de Paris,' 1888, lxiii, 910.)

A man, æt. 26, was hit by a buffer on the upper part of the neck and thrown a distance. When seen the neck was very painful. There was a suboccipital depression extending as far as the spinous process of the axis; a corresponding projection could be felt in the pharynx. There was paralysis of all four limbs.

*Post mortem.*—There was dislocation forwards of the atlas upon the axis to the left side with compression of the cord. There was also a vertical fracture of the posterior and middle parts of the body of the fifth cervical vertebra. The sixth and the seventh vertebræ were likewise fractured.

Death twenty hours after the accident.

CASE 4.—*Fracture of the atlas and of the sixth cervical vertebra.* (Hamilton. 'Dublin Journal of Medical Science,' 1872, liii, 459.)

A man, æt. 40, fell from a height of sixteen feet on to the top of his head. He soon recovered consciousness and gave an account of the accident. There was paralysis, etc., below the nipple line. The head was thrown back as in opisthotonos, and there was pain in the neck.

*Post-mortem.*—The atlas was comminuted; a fracture traversed the anterior arch; the posterior arch was broken in two places; the right transverse process was broken. The odontoid process was uninjured; lower down there was

a fracture of the sixth cervical vertebra, and at this level the cord was much injured.

Death at the end of forty-eight hours.

**CASE 5.**—*Fracture of the atlas and of the fifth and sixth cervical vertebræ.* (Miles. The specimen is in the private museum of Mr. Miles, of Edinburgh. The details were given to me by Mr. John Struthers.)

The specimen was taken from a girl, who had been hay-making. She fell on her head or on her head and shoulder. Death was instantaneous. There are two fractures. The upper affects the atlas alone and is evident as two fractures, one in front and one behind the left lateral mass. The lower injury is a fracture-dislocation between the fifth and sixth cervical vertebræ with comminution of the right lamina and pedicle of the fifth.

**CASE 6.**—*London Hospital Pathological Museum Catalogue.*

205. The body of the fifth cervical vertebra is crushed. But the most interesting part of the lesion is that of the first vertebra. This shows a vertical fracture through its posterior tubercle. On the anterior aspect there are two fractures, which have gaped slightly; and have occurred almost symmetrically in front of the condyles.

The six cases display a wonderful unanimity. In all both fractures occurred in the cervical region. A further point is illustrated if the sites of the lesions are put into tabular form.

#### *Injured Vertebra.*

	<i>Upper injury.</i>	<i>Lower injury.</i>
South's case . . . .	2nd	5th.
David's case . . . .	1st and 2nd	5th, 6th, and 7th.
Hamilton's case . . . .	1st	6th.
Miles's case . . . .	1st	5th and 6th.
St. Thomas's Hospital case . . . .	2nd and 3rd	5th and 6th.
London Hospital case . . . .	1st	5th.

The upper injury practically affects only the first two vertebræ, more frequently the first. The lower lesion picks out most frequently the fifth vertebra, and then the sixth.

So it may be stated that typically the upper lesion is cervical 1 and 2, with the lower cervical 5 and 6. The primary fracture is most probably the lower one; the upper being secondary, and due to the head being forcibly driven on to the flexed, fractured, but sufficiently fixed spine.

The following case illustrates what might have been the lower lesion in a dual fracture had the broken spine had sufficient rigidity to allow an injury to the atlas or axis being added. The additional violence required to cause this second lesion might have led to a fatal injury of the spinal cord opposite the fifth cervical vertebra :

*Case of fracture of the fifth cervical vertebra without any spinal symptoms.*

A man, A. G—, in the course of his performance as a gymnast in a music hall at Blackburn, whilst turning a somersault, hurt his neck. This was followed by instant paralysis and anæsthesia of all four limbs and trunk. Some brandy was administered, and these symptoms passed away in about twenty minutes. He was taken to the infirmary, where he was detained for about ten days. After his discharge he came to London, and applied for admission at St. Thomas's Hospital. His neck was rigid in the lower part, where it also presented considerable thickening. A skiagraph, taken by Mr. A. H. Greg, showed that there was a fracture with comminution of the anterior part of the body of the fifth vertebra. The pedicles of the same vertebra were also broken. The man made an uninterrupted recovery and has returned to his work as a gymnast.

Shown at the Clinical Society, 'Transactions,' 1904, p. 234, and again in October, 1905, see 'Transactions.'

All the known examples of dual fracture were fatal. There is no record of an instance of these multiple but distinct fractures having recovered. Yet it is known that some injuries to the spine on the level of the fifth and sixth cervical vertebræ recover; it has been shown in other communications<sup>1</sup> that those at the level of the first and second do recover, and, further, that this high lesion is not infrequently quite

<sup>1</sup> 'Clinical Society's Transactions,' 1904 and 1905.

overlooked.<sup>1</sup> There seems a fair chance for cases of the dual and distinct fractures of the spine to recover, provided always that the violence causing the second and upper fracture does not drive the spine on to the cord at the level of the first and lower lesion. In David's case the spinal cord was compressed by the forwardly-dislocated atlas; in both South's and Hamilton's cases the lesion to the cord was at the level of the lower injury. In the museum cases the situation of the injury to the cord is not known. It has been shown elsewhere that the higher injuries are frequently unaccompanied by any anæsthetic or paralytic symptoms whatever, so that it would seem, from both *a priori* and *a posteriori* reasonings, that the cord lesion is more common opposite the site of the lower injury.

In conclusion, the characteristic features of this class of spinal injury may be briefly summed up as follows:

1. The fractures are always produced by indirect violence.
2. The lower of the two fractures is the primary one.
3. The upper fracture or dislocation is secondary.
4. When the spinal cord is injured, the lesion is at the level of the lower fracture.
5. All the six cases reported occurred in the cervical region.
6. The upper lesion affected the first or second vertebræ, the lower affected the fifth or sixth vertebræ.
7. The lower injury usually involved the body of the affected vertebra. In most instances the anterior part of the body was comminuted, and in a few cases the laminae or pedicles were broken secondarily to the fracture of the body.
8. The character of the upper lesion was less definite. It presented two main features. Either (*a*) a fracture, usually comminuted, of the atlas, or (*b*) a dislocation, rotary or otherwise, of the atlas on the axis, which was, at times, accompanied by a fracture of the odontoid process.
9. These cases, though they must be very infrequent, may recover, and need not show any other symptoms besides those of a stiff and painful neck.

<sup>1</sup> Cases to prove this were shown at the Clinical Society, October, 1906.



# THE REGIONAL FREQUENCY OF FRACTURES OF THE SPINE.

By EDRED M. CORNER, M.B.CANTAB., F.R.C.S.

AMONGST the many hospitals in London only a very few publish adequate and full accounts of the cases which have been treated by them. Of these few, five are pre-eminent, St. Thomas's, St. Bartholomew's, University College, Middlesex, and Westminster. Having consulted all the available records, it was found that details of 336 cases of gross spinal injury were obtained. Of this 336; in 170 the cervical region was affected, in 131 the dorsal region, and in 35 the lumbar region. A visit to the pathological museums of England, Scotland and Ireland showed the existence of 377 specimens; 220 of which were of the cervical region, 105 of the dorsal, and 52 of the lumbar. Courteney reporting a series of 158 cases which were treated in the Boston City Hospital between 1881 and 1897, found 50, or 33·3 per cent. of the cervical region, *all of which were fatal.*

	Cervical.	Dorsal.	Lumbar.	Total.
London Hospitals . . .	170 or 50 % ...	131 or 39 % ...	35 or 11 % ...	336
Museums of British Isles	220 or 58 % ...	105 or 28 % ...	52 or 14 % ...	377

The hospital and museum figures agree fairly well and are a very important qualification on the Boston City Hospital figures, giving the key to the explanation of the low

percentage of the cervical fractures in their practice. If you take the St. Thomas's Hospital figures for the years 1894—1902, out of 25 fractures of the cervical spine nine recovered; whilst during the preceding eight years, 1886—94, only one out of twelve recovered. These figures teach us two lessons. Firstly, that fractures of the cervical region are becoming more frequently diagnosed. And secondly, the ones which are now diagnosed, and which were previously not diagnosed, are found amongst the cases which recover. A similar state of affairs is found with regard to fractures and dislocations of the dorsal and lumbar regions, particularly the latter. But the recognition of obscure cases has not been nearly so rapid as it has been in the case of the cervical region. Hence the percentage of frequency of fractures in the cervical region has risen out of proportion to those of the other regions of the spine. That Dr. Courteney's figure, 33·3 per cent. of fatal cases for 1897 should appear low, in the light of knowledge in 1906, is not surprising.

#### STATISTICS OF FRACTURES OF THE SPINE.

##### I. *For Single Vertebra.*

From the above sources it is possible to construct a table which shows the frequency in which fractures of the various vertebræ occur:—that is to say, showing the *segmental incidence of fractures of the spine*.

<i>Cervical region.</i>		Museums.		Hospitals.		Boston. <sup>1</sup>
Vertebra—1	...	19	...	0	..	} 1
2	...	57	...	3	...	
3	...	33	...	5	...	
4	...	47	...	12	...	} 9
5	...	93	...	32	...	
6	...	103	...	39	...	} 40
7	...	42	...	25	...	
<i>Dorsal region.</i>						Menard. <sup>2</sup>
Vertebra—1	...	17	...	14	...	12
2	...	9	...	4	...	10
3	...	9	...	5	...	8

<sup>1</sup> Quoted from Courteney's paper.

<sup>2</sup> Quoted from Bergmann and Mickulicz's 'Surgery.'

*Dorsal region (continued).*

		Museums.		Hospitals.		Menard.
Vertebra—4	...	14	...	3	...	9
5	...	13	...	4	...	15
6	...	18	...	6	...	10
7	...	13	...	8	...	10
8	...	16	...	4	...	20
9	...	14	...	4	...	25
10	...	17	...	5	...	32
11	...	19	...	8	...	37
12	...	51	...	14	...	80

*Lumbar region.*

Vertebra—1	...	45	...	8	...	28
2	...	10	...	2	...	23
3	...	12	...	3	...	6
4	...	11	...	3	...	7
5	...	4	...	1	...	1

These figures show :

With regard to the cervical region—

1. The sixth vertebra is the one most commonly fractured.
2. The fifth       "       "       next       "       "
3. The second vertebra, the axis is broken more frequently than the first, third, fourth or seventh vertebra (museum figures).

With regard to the dorsal region—

1. The fracture is commonly found in the last three vertebrae; of which three, the twelfth is by far the most frequently broken.
2. Two parts of the dorsal region seem comparatively seldom affected, namely, about the fourth and the eighth vertebrae.
3. The frequency of fracture is greater at the first dorsal and again about seventh and twelfth vertebra.

With regard to the lumbar region—

1. The first lumbar vertebra is by far the most frequently broken.
2. The fifth lumbar is the most rarely broken.

With regard to the vertebral column as a whole—

The sixth cervical vertebra is the one most frequently broken.

The fifth	"	"	"	next	"
The seventh	"	"	"	"	"
Then the twelfth dorsal vertebra	"	"	"	"	"

*II. For Two Vertebrae.*

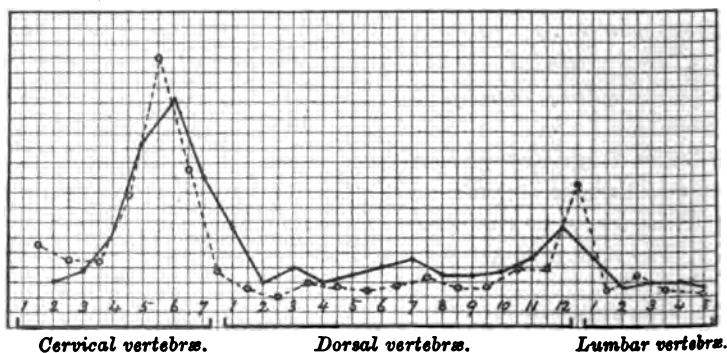
When the injury involves two vertebrae, the following table can be made out.

Cervical	1—2	10	Dorsal	6—7	2
"	2—3	8	"	7—8	4
"	3—4	7	"	8—9	2
"	4—5	21	"	9—10	2
"	5—6	48	"	10—11	6
"	6—7	25	"	11—12	6
"	7—1 Dorsal	5	"	12—1 Lumbar	22
Dorsal	1—2	2	Lumbar	1—2	2
"	2—3	0	"	2—3	4
"	3—4	3	"	3—4	2
"	4—5	2	"	4—5	0
"	5—6	1			

This shows—

1. The most frequent situation for the injury of the two vertebrae is at the fifth and sixth cervical.

**CURVE OF THE REGIONAL FREQUENCY OF FRACTURES OF THE SPINE.**



The continuous line indicates the regional incidence of the fracture of *one* vertebra; the dotted line, for the fractures of *two* vertebrae.

2. Next at the sixth and seventh cervical, last dorsal and first lumbar, fourth and fifth cervical.

3. The greatest frequency of the injury is in the cervical region.

4. The lowest dorsal vertebræ are those most frequently affected in this region.

### III. *For Three or more Vertebræ.*

When three or more vertebræ were affected—

The cervical region was involved	.	16 times.
„ cervico-dorsal region	.	4 „
„ dorsal region	.	9 „
„ dorso-lumbar region	.	Once.
„ lumbar region	.	„

### IV. *For the Numbers of Vertebræ Injured.*

With regard to the number of vertebræ—

#### *Cervical region :*

Three vertebræ broken	.	Seven times.
Four „ „	.	Three „
Five „ „	.	Once.
Six „ „	.	„

#### *Dorsal region :*

Three „ „	.	Twice.
Four „ „	.	„
Five „ „	.	Once.
Six „ „	.	Twice.
Seven „ „	.	„

#### *Lumbar region :*

Three „ „	.	Once.
-----------	---	-------

#### *Cervico-dorsal region :*

Three „ „	.	„
Four „ „	.	„
Seven „ „	.	„
Eight „ „	.	„

*Dorso-lumbar region :*

Three vertebræ broken . . . Once.

Three vertebræ 12 times, four 6, five 2, six 3, seven 3, and eight once.

1. Multiple fractures are most common in the cervical region, then in the dorsal and the cervico-dorsal region.

2. The most extensive injuries, amounting to the fracture of seven and eight vertebræ, were found in the cervico-dorsal region.

This anatomical survey has shown the situations where injuries of the spine are most common, namely, in the cervical spine and particularly of its sixth vertebra. This knowledge is based upon the sure observations of *post-mortem examinations*. Of recent years, owing to the introduction of the X rays, we are able to demonstrate the existence of spinal fractures, which previously we had only suspected, even if that. The greatest advances have been made with regard to lesions of the first two vertebræ—the atlas and the axis. *Post-mortem* observations have shown these injuries to be rare, but they have also shown them healed in people who had died long after the accident. Now we are discovering these fractures earlier and during life, by means of skilled examinations of cases of “sprained neck” in people who have no paralytic symptoms, and who get quite well. A careful examination of all the specimens in British museums, and of all cases in the literature on fractures of these bones forms a solid foundation upon which to build ideas about the cases whose existence we are only beginning to recognise. Most advance will be made in the study of neck lesions. Next to this obscure fractures are found most common in the lumbar region, but as we know that lumbar fractures only form about 11 per cent. of all fractures of the spine, they cannot be frequent. Moreover, the spinal cord does not extend into this region; which must minimise their importance. Any advances which are made in our knowledge of injuries of the lumbar spine cannot be as great or, perhaps, as useful as those of the cervical region.

# THE DIAGNOSTIC VALUE OF CAMMIDGE'S PANCREATIC REACTION.

---

By M. A. CASSIDY, M.A., M.B., B.C.CANTAB.

---

IN the year 1903 Opie (1) stated that disease of the pancreas is rarely recognised during life ; in spite of the increasing amount of attention which has been paid to the signs and symptoms of pancreatic disease, this statement is still justified. In the Hunterian Lectures, 1904, Mayo Robson (2) discusses at considerable length the diagnosis of pancreatic disease and emphasises the importance of the following signs and symptoms: the presence of fat in the stools, the presence of undigested muscle in the stools, "diarrhœa pancreatica," dyspepsia and anorexia, emaciation, nausea and vomiting, an epigastric tumour, epigastric pain and tenderness, pressure symptoms, a tendency to hæmorrhages, jaundice, and glycosuria.

It is evident that many, indeed most, of the above signs and symptoms point equally to disease of organs other than the pancreas ; in this connection, too, one must remember that pancreatic disease is seldom uncomplicated, but is usually accompanied by changes in the duodenum, liver, or bile-ducts.

Four signs in the above list—namely the presence of undigested fat, or muscle, in the stools, an epigastric tumour, and glycosuria—have been considered to point with certainty to

pancreatic disease, and these will therefore be discussed briefly.

The presence of undigested fat or muscle in the stools, though often significant, is never pathognomonic. Occlusion of the common bile-duct, for example, may be followed by the appearance of fat in the stools; moreover extensive pancreatic lesions have been found in cases where this sign was never observed.

When the anatomical position of the pancreas is considered, it is clear that only the more gross alterations in its size are likely to be detected by abdominal palpation; hence in many cases of proved pancreatic disease no epigastric tumour is detected during life.

Finally, the absence of glycosuria is of no diagnostic importance; out of ninety cases of proved pancreatic disease in only five did Cammidge find glycosuria.

Enough has been said to lay stress on the difficulty in diagnosing disease of the pancreas; and if such difficulty be found in diagnosing merely that the pancreas is diseased, how much greater is the difficulty in forming an opinion of any value as to the nature of such disease—often a question of supreme importance, perhaps of life or death, to the patient.

Appreciating these difficulties, Cammidge has devised his so-called "pancreatic reaction" which, he maintains, is an important aid to the diagnosis of pancreatic disease. In the Arris and Gale Lecture of 1904 (3) he describes this reaction at length, and to this lecture the reader is referred for the full details of a somewhat complicated process. Briefly, two reactions are described. In Reaction A urine from the suspected case is boiled with strong hydrochloric acid, neutralised by lead carbonate, filtered, and then boiled with sodium acetate and phenyl-hydrazine hydrochloride; on cooling, if the reaction is positive, "sheaves of golden yellow crystals" are obtained.

Speaking of this reaction, Cammidge states that "although a useful aid in diagnosis, the results are not absolutely trustworthy, since a positive reaction is obtained with the urine of patients in whom active tissue-change is occurring—*e. g.* in cancer, adenitis, pneumonia, etc. In cases of pancreatitis the



formation of these crystals is interfered with by a preliminary treatment of the urine with a strong solution of mercuric chloride, which treatment does not, however, affect the appearance of the crystals in cases of cancer and the above other conditions" (Reaction B).

If any crystals are obtained, they are observed microscopically whilst irrigated with 33 per cent. sulphuric acid, and the time necessary for complete solution is ascertained. In acute pancreatitis the crystals are said to dissolve in from thirty to forty-five seconds; in chronic pancreatitis from thirty seconds to one and a half minutes, or, rarely, two minutes are necessary; whilst in malignant disease solution occurs in from three to five minutes.

His final conclusions are: (1) If no crystals are formed in either reaction, the pancreas is healthy. (2) If crystals are formed in Reaction A, but not in Reaction B, active inflammation of the pancreas is present and surgical interference is generally necessary. The time necessary for solution indicates whether the inflammation is acute or chronic. (3) If crystals are formed in both reactions, (a) there may be malignant disease of the pancreas, in which case the crystals dissolve in three to five minutes, (b) damage to the pancreas by old pancreatitis may be indicated, (solution occurs in one to two minutes), (c) the pancreas may be healthy, but one of the conditions previously alluded to, —e. g. adenitis or pneumonia—may be present (solution in one minute).

Ham and Cleland (4), in a letter to the 'Lancet' (1904, vol. i, pp. 1378), vigorously contest these conclusions. They state that the presence or absence of crystals is determined by the final degree of concentration of the solution alone; that if this concentration is carried sufficiently far, crystals are obtained from all urines examined, whether derived from the pancreatic cases or not; and finally, they maintain that the crystals are merely a compound of the lead salt and phenyl-hydrazine hydrochloride, and that if lead be previously removed from the solution no crystals are then obtained.

Replying to this letter ('Lancet,' 1904, vol. i, p. 1750), Cammidge (5) states that precisely similar results are obtained if hydrolysis is effected by sulphuric acid and neutralisation

by barium carbonate. He admits that his process is empirical and accounts for the result obtained by Ham and Cleland by their failure to follow strictly his instructions.

Willeon (6) ('Lancet,' 1904, vol. ii, p. 211) states that normal urine invariably contains some substance which after hydrolysis and treatment with phenyl-hydrazine hydrochloride yields characteristic crystals.

In the 'Brit. Med. Journ.' of July, 1904, p. 43, Cammidge (7) writes that the test is not claimed to be pathognomonic of pancreatic disease, but is merely suggested as an aid to diagnosis. He states that out of between 400 and 500 cases examined by him, in only four cases of undoubted pancreatic disease has the reaction been negative, and of these, three cases gave a positive reaction on a subsequent occasion.

Gruner (8) ('Brit. Med. Journ.,' 1904, p. 1516) writes: "Healthy urines have not always given the test" (from which one must conclude that he *has* obtained a positive reaction when working with "healthy urine"). He states that crystals can be obtained by the interaction of a lead salt and phenyl-hydrazine hydrochloride, but that such crystals have no resemblance to the crystals of a true positive reaction. He also states that the test has failed in undoubted cases of carcinoma of the pancreas.

Langdon Brown (9) in the 'Practitioner' of August, 1905, writes that at St. Bartholomew's Hospital the results yielded by the reaction were disappointing.

In the 'Lancet' of December 23rd, 1905, Mayo Robson (10) describes a case of chronic pancreatitis. Reactions A and B were both positive, and the crystals dissolved in from thirty to forty-five seconds; from this Cammidge concludes that "while the condition is probably of some standing, there is at present active inflammation of the gland." (This interpretation of the reaction does not seem to be in accordance with the "conclusions" of p. 625).

Mayo Robson, speaking of the value of the pancreatic reaction, remarks: "This test is certainly of great help in diagnosis; and though there are several conditions which may possibly lead to this or a similar reaction in the urine, I find that when it is employed along with the clinical sym-

ptoms, the physical signs, and an analysis of the fæces, it forms a most important help in diagnosis."

I have attempted to give as succinctly as possible the history of the pancreatic reaction up to the present time. It will be seen that this test of pancreatic disease, though apparently full of promise, is far from being on an assured basis. It will be of interest, therefore, to analyse the notes of twenty-five cases to which this test has been applied in the clinical laboratory of St. Thomas's Hospital. Every case in which the reaction has been tried at St. Thomas's Hospital is here recorded, with no attempt at selection or exclusion. In every instance Cammidge's instructions were faithfully carried out and always under the direct supervision of Dr. Dudgeon—a fact which is a sufficient guarantee of the accuracy of the technique.

In fifteen of the twenty-five cases the diagnosis was confirmed by operation or by autopsy; in the remaining ten cases the diagnosis rested on clinical evidence only. These two series of cases are tabulated separately (pp. 628 to 629).

In every case the result of the pancreatic reaction is given and, where possible, the interpretation of this result in the light of Cammidge's Arris and Gale Lecture. It will be noticed that on eight occasions a variety of reaction not described by Cammidge was obtained. Thus, for instance, in Case 5 Reaction A was positive and Reaction B negative; consequently we must conclude that "active inflammation of the pancreas" was present; but in acute pancreatitis the crystals should dissolve in thirty to forty-five seconds and in chronic pancreatitis in less than two minutes; in this case solution occurred in five minutes. Similarly in Case 10 twenty minutes and in Case 23 an hour and a half was the time necessary for solution.

The six cases in which the pancreas was examined after death afford the most important evidence as to the diagnostic value of the pancreatic reaction. In three of these cases the reaction was negative; in all three the pancreas was found to be normal. In one case the reaction of "chronic pancreatitis" was obtained and carcinoma of the pancreas was found. In the remaining two cases an "atypical reaction" was obtained; in one of these carcinoma

628 *Diagnostic Value of Cammidge's Pancreatic Reaction.*

## SERIES I,

*Where the Diagnosis was confirmed by Operation or Autopsy.*

No. of Case.	Age.	Diagnosis.	Pancreatic reaction and its interpretation.	Remarks.
1	7½	Abdominal contusion; fat necrosis	A, positive; solution within 45 seconds B, negative "Acute pancreatitis" (Three weeks later A and B both negative)	Pancreas not examined at operation; typical fat necrosis present in omentum and mesentery. Fat demonstrated in stools.
2	49	Carcinoma of gall-bladder and obstructive jaundice	A and B, both negative. "Pancreas healthy"	Pancreas apparently normal at P.M.
3	68	Pericholecystitis followed by general peritonitis	A and B, both negative. "Pancreas healthy"	Pancreas apparently normal at P.M.
4	72	Scirrhus of pancreas	A, positive; solution in 1 minute (N.B. A few crystals resisted solution). B, negative ? "chronic pancreatitis"	Growth limited to head and neck of the pancreas.
5	7	Retro-peritoneal sarcoma	1. A, positive solution in 5 minutes. B, negative. ? Interpretation 2. A, positive; no solution. B, positive; solution in one minute. ? interpretation	Head of pancreas extensively infiltrated by the growth; body of the gland healthy.
6	67	Cholelithiasis	A and B, both negative. "Pancreas healthy"	173 stones removed; pancreas appeared normal at operation.
7	38	Appendicitis ? cholelithiasis	A and B, both negative. "Pancreas healthy"	Cholecystotomy and appendicectomy performed; pancreas apparently normal.
8	38	Cholelithiasis	A and B, both negative. "Pancreas healthy"	Large stone in upper part of common duct.
9	52	Chronic pancreatitis	A, positive; solution in one minute. B, negative. "Chronic pancreatitis"	Condition of chronic pancreatitis found at operation.
10	58	? Malignant disease	A, positive; solution in 20 minutes. B, negative. ? interpretation	At operation pancreas apparently normal; liver surface covered with nodules, one of which was removed; it proved to be inflammatory tissue only.
11	54	Carcinoma of stomach and liver	A and B, negative. "Pancreas healthy."	P.M.—Stomach firmly adherent to pancreas, which, however, appeared normal.
12	50	Pancreatic cyst (vide page 12)	A and B, negative. "Pancreas healthy"	The liquid contents of the cyst contained neither amylolytic nor proteolytic ferments.

No. of Case.	Age.	Diagnosis.	Pancreatic reaction and its interpretation.	Remarks.
13	—	Pericholecystitis	A and B, negative. "Pancreas healthy"	At operation pancreas appeared normal.
14	—	Malignant disease	A, positive; solution in three minutes. B, negative. ? interpretation	Diagnosed clinically as malignant disease of the pancreas. At operation pancreas appeared normal.
15	32	Obstructive jaundice ? chronic pancreatitis	A, positive; no solution in ten minutes. B, negative. ? interpretation	P.M. — Carcinoma of the pancreas was found, with marked chronic pancreatitis.

SERIES II,

*Where the Diagnosis was not confirmed by Operation or Autopsy.*

No. of Case.	Age.	Diagnosis.	Pancreatic reaction and its interpretation.	Remarks.
16	56	Chronic pancreatitis	A and B, negative. "Pancreas healthy"	The diagnosis made on somewhat scanty clinical evidence.
17	64	Obstructive jaundice	A and B, negative. "Pancreas healthy"	Persistent jaundice and enlarged liver, with epigastric tenderness.
18	71	Cholelithiasis	A and B, negative. "Pancreas healthy"	Nil.
19	17	Vomiting ? gastric	A and B, negative. "Pancreas healthy"	Indefinite mass felt in epigastric region. ? Pancreas.
20	34	Cholelithiasis	A and B, negative. "Pancreas healthy"	Nil.
21	45	? Chronic pancreatitis ? duodenal ulcer	A and B, negative. "Pancreas healthy"	Localised tenderness above and to the right of the umbilicus.
22	34	No official diagnosis made.	A, positive; solution in four minutes B, negative. ? interpretation	At present no symptoms pointing to pancreatic disease.
23	—	? Cancer of pancreas, following cholelithiasis	A and B, positive; solution in 1½ hours. ? interpretation	Operation for gall-stones some years ago; now there is a hard epigastric mass believed to be a malignant growth of the pancreas.
24	—	Cholelithiasis	A and B, negative. "Pancreas healthy."	Large stone passed two days before reaction tried.
25	—	? Carcinoma of stomach	A, positive; solution in three minutes. B, negative. ? interpretation	At present no evidence of pancreatic disease.

with chronic pancreatitis, and in the other sarcoma of the pancreas was found.

The nine cases which were submitted to operation, but which were not examined after death, are also of considerable value.

In five such cases a negative reaction was obtained; in one of these the diagnosis of pancreatic cyst was made (see p. 634), but in the remaining four cases the pancreas appeared to be normal at the operation. In two cases an atypical reaction was obtained; in each the pancreas appeared to be normal at the operation. In one case the reaction of "acute pancreatitis" was obtained; though the pancreas was not examined at operation, extensive fat-necrosis was found in the omentum and mesentery, and fat was demonstrated in the stools. In the last case of this group the reaction of "chronic pancreatitis" was obtained and this condition was found at the operation.

The cases tabulated in Series II are of comparatively little value in the present discussion. In seven cases a negative reaction was obtained; in five of these there was no evidence pointing directly to pancreatic disease; in one the diagnosis of chronic pancreatitis was made on clinical grounds, and in the remaining case the diagnosis was "? chronic pancreatitis; ? duodenal ulcer." In neither of these cases was the evidence of pancreatitis convincing (see pp. 635 and 636). Finally, in three cases an atypical reaction was given; in two of these there is at present no evidence of pancreatic disease; in the third case malignant disease of the pancreas has been diagnosed on clinical grounds.

#### SUMMARY OF THE FOREGOING RESULTS.

##### *Group I, where the Pancreas was examined after Death.*

##### Six Cases.

No. of cases.	Reaction.	Condition of pancreas.
3	Negative.	Normal Pancreas.
1	Atypical.	Sarcoma.
1	Atypical.	Carcinoma (with chronic pancreatitis).
1	Chronic Pancreatitis.	Carcinoma.

*Group II, where Operation was performed.*  
Nine Cases.

No. of cases.	Reaction.	Condition of pancreas.
4	Negative.	Normal.
1	Negative.	? Pancreatic cyst.
1	Acute pancreatitis.	Not investigated. (Fat necrosis present elsewhere).
1	Chronic pancreatitis.	Chronic pancreatitis.
2	Atypical.	Normal.

*Group III, where neither Autopsy nor Operation was performed.* Ten cases.

No. of cases.	Reaction.	Diagnosis and remarks.
5	Negative.	No evidence of pancreatic disease.
2	Negative.	? Chronic pancreatitis.
2	Atypical.	No evidence of pancreatic disease.
1	Atypical.	Malignant disease of pancreas.

Out of the whole series of twenty-five cases, in ten a positive reaction was obtained; in four of these the pancreas was found to be diseased, in two it appeared to be normal at operation, and in four the pancreas had not been examined.

In fifteen cases reaction was negative; of these, in seven the condition of the pancreas was found to be normal, and in seven the condition of the pancreas had not been examined; the remaining case was diagnosed as "pancreatic cyst" (see notes on this case).

Reaction B was positive on two occasions only, namely in Case 5 (sarcoma of the pancreas) and in Case 23 (believed to be carcinoma of the pancreas).

CONCLUSIONS.

(1) If Reaction A is positive in a case of suspected pancreatic disease, the probability of such disease being present is increased.

(2) No conclusions can be drawn from the degree of solubility of any crystals obtained.

(3) If the reaction is negative, it is unlikely that the pancreas is diseased (in no case in which a negative reaction was obtained was disease of the pancreas actually demonstrated).

(4) The value of Reaction B is doubtful; in two cases of malignant disease of the pancreas Reaction B was negative.

The following cases are of sufficient interest to merit additional notice :

CASE 1 was a boy, F. C—, æt.  $7\frac{1}{2}$ , who was admitted under Mr. Clutton's care on March 29th, 1905. Three days previously he had been run over by a furniture van, two wheels of which passed over the abdomen. On admission a condition of collapse was present and the abdominal wall was everywhere rigid and tender. On March 31st the abdomen was opened by Mr. Clutton; nodules of fat necrosis were present in the omentum below and to the left of the stomach. One of these nodules was removed for microscopical examination and was found to be typical fat necrosis. The pancreas was not examined.

During the fortnight following this operation the boy complained of pain and tenderness in the left hypochondrium; his appetite was poor, and he was dull and apathetic. On April 3rd and 5th fat was found in the stools. On April 17th the pancreatic reactions of acute pancreatitis were obtained, whereas on May 3rd both reactions were negative. The boy recovered and was discharged on May 9th. .

CASE 4.—L. R—, æt. 72, was admitted under Dr. Sharkey on April 7th, 1904, with a history of persistent jaundice of five weeks' duration. On admission she was emaciated and deeply jaundiced. The liver edge was palpable one inch below the costal margin in the right nipple-line. To the right of the umbilicus "a rounded somewhat soft mass, two or three inches long, freely mobile and slightly tender" was felt. On April 16th Reaction A was positive and the crystals dissolved in one minute; a few crystals, however, appeared to resist solution. Reaction B was negative.



If we ignore the insoluble crystals, Cammidge's interpretation of this reaction is "chronic pancreatitis." The patient died on April 17th.

At the autopsy the head and neck of the pancreas were found to be infiltrated with columnar-celled carcinoma. The growth constricted the bile and pancreatic ducts, both of which were dilated behind the constriction. The liver was large and the gall-bladder distended, but no secondary growths were found.

CASE 5.—A boy, F. P—, æt. 7, was admitted under Dr. Box on March 1st, 1904, with a history of jaundice during the last eight weeks and of abdominal pain during the last three weeks. The liver was much enlarged, and the gall-bladder was palpable. On May 24th a hard mass was felt in the middle line just above the umbilicus. On June 9th the atypical reaction referred to on p. 627 was obtained. On July 4th another atypical reaction was obtained; Reaction A gave an abundance of crystals, but these were insoluble in sulphuric acid; crystals soluble in one minute were obtained by Reaction B. On July 6th fat and connective tissue were found in the fæces, but no muscle-fibres were seen. On July 7th a hard and fixed mass was felt in the left iliac fossa. The jaundice persisted throughout and the boy became much emaciated. He died on July 23rd.

At the autopsy an extensive retro-peritoneal growth was found, which proved to be a round-celled sarcoma. The growth infiltrated the head of the pancreas and constricted the bile and pancreatic ducts, both of which were dilated behind this constriction. The body of the pancreas was normal.

CASE 9.—E. S—, æt. 52, was admitted under Dr. Hawkins on September 14th, 1905. She had always been a dyspeptic subject. In June she had a sudden attack of severe epigastric pain, accompanied by vomiting. She had been in bed since this attack, complaining of epigastric pain after food, of occasional sickness, and of loss of weight.

A hard mass, moving with respiration, and corresponding in shape and situation to the pancreas, was felt above the

umbilicus. On October 3rd the pancreatic reaction of chronic pancreatitis was obtained.

On October 9th the abdomen was opened by Mr. Makins and the mass referred to above was found to be the pancreas, which was enlarged and hard—a chronic inflammatory change. The gall-bladder was small and contained numerous small calculi. The patient was discharged on November 6th.

CASE 10.—J. B—, æt. 58, was admitted on October 12th, under Dr. Hawkins. Two years ago he had an attack of severe epigastric pain, accompanied by sweating and vomiting; he was not jaundiced during this attack. For the last seven months he had been jaundiced, with occasional attacks of pain, usually in the epigastric region, but sometimes felt in the right hypochondrium and right shoulder. On admission he was deeply jaundiced; the liver was much enlarged and the gall-bladder was distended. Reaction A was positive, and solution was completed within 20 minutes; Reaction B was negative.

On November 17th the abdomen was explored by Mr. Makins. The anterior surface of the liver was found to be studded with small nodules, which were thought to be of a malignant nature. One nodule was removed for microscopical examination and was found to be composed of inflammatory tissue only. Nothing else abnormal was discovered in the abdomen.

CASE 12.—W. S—, a man æt. 50, was admitted under Mr. Battle on October 7th, 1904. Fourteen years ago he was run over by a carriage, the wheels of which passed over his abdomen and fractured several of the lower ribs. Five years ago, after lifting a heavy weight, he had an attack of epigastric pain which lasted two or three days and was associated with jaundice and melæna.

Two years ago he first noticed an epigastric swelling, which has been increasing in size ever since. Four months ago Mr. Battle tapped this tumour and withdrew six ounces of a deep red liquid. This liquid was alkaline and of specific gravity 1022; it solidified on boiling, but did not coagulate spontaneously; it contained no sugar.

On October 17th both Reactions A and B were negative.

On October 18th the cyst was opened and drained. The seven ounces of purulent liquid withdrawn were examined for amylolytic and for proteolytic ferments, but without success.

The man made a rapid and complete recovery.

It will be seen that in the notes of this case there is but little evidence that the cyst had any connection with the pancreas. Its anatomical relations were apparently not determined at the operation nor were any ferments demonstrated in its contents.

CASE 15.—F. C—, æt. 32, was admitted under Dr. Acland on October 13th, 1905. He gave a history of a sudden attack of epigastric pain six months ago accompanied by persistent jaundice.

On admission he was deeply jaundiced, the liver was felt at the level of the umbilicus, and the gall-bladder was distended. Reaction A was positive, but the crystals, after 10 minutes' observation, were still insoluble; Reaction B was negative.

On November 6th the abdomen was opened and malignant disease of the liver was diagnosed by the surgeon; the gall-bladder was opened and drained.

The patient died on December 9th. At the autopsy suppurative cholangitis was found; there was a firm and narrow stricture of the common bile-duct near its termination, the duct being compressed by a columnar-celled carcinoma of the pancreas. Associated with the carcinoma was a condition of marked chronic pancreatitis.

CASE 16.—T. B—, æt. 56, was admitted on May 11th, 1905, under Dr. Mackenzie. He complained of intermittent epigastric and præcordial pain during the last two or three years, of continuous jaundice during the last sixteen months, and of loss of weight.

The liver was palpable one and a half inches below the costal margin in the right nipple line; it felt hard and smooth. There was some tenderness in the umbilical region and a hard mass, of indefinite outline, could be felt in this situation.

The stools contained no fat.

Whilst in the hospital he had several slight attacks of epigastric pain ; the jaundice, however, became less intense, and he was discharged on May 30th.

It is unfortunate that the subsequent history of this case could not be ascertained ; on the available evidence the diagnosis must remain uncertain.

CASE 17.—W. B—, æt. 64, was admitted under Dr. Acland on July 8th, 1904, with a history of fourteen days of abdominal pain and jaundice of seven days' duration. The liver edge was just palpable and there was slight epigastric tenderness. The stools contained no fat and the pancreatic reaction was negative.

His condition remained unchanged during the month he spent in hospital.

CASE 21.—J. P—, æt. 45, was admitted under Dr. Hawkins on September 25th, 1905, with a history of epigastric pain beginning three hours after food, of increasing weakness and loss of weight, and of alternating periods of diarrhoea and constipation ; these symptoms were first noticed about a year ago. On admission there was slight epigastric tenderness and the stomach was found to be dilated. On October 24th undigested muscle-fibres were seen in the stools ; no fat was present, however.

Whilst in hospital he had several attacks of epigastric pain, sometimes of a severe character. There was often a definitely localised tender spot a little above and to the right of the umbilicus.

The pancreatic reaction was negative.

The official diagnosis was " ? chronic pancreatitis, ? duodenal ulcer."

CASE 22.—A. B—, æt. 54, is still in hospital and no official diagnosis has been made. There is a history of progressive anæmia and loss of weight during the last year and also of pain after food and of swelling of the abdomen and legs during the last month. There is no history of alcoholic excess.

On admission there were signs of free fluid in the abdomen and the legs were œdematous. The liver edge was felt

two and a half inches below the right costal margin in the nipple line, and the spleen also was palpable. The superficial epigastric veins were prominent.

#### REFERENCES.

- (1) OPIE.—Quoted by Langdon Brown, 'Practitioner,' August, 1905.
- (2) MAYO ROBSON.—Hunterian Lectures, 'Lancet,' 1904.
- (3) CAMMIDGE.—Arris and Gale Lecture, 'Lancet,' 1904.
- (4) HAM and CLELAND.—'Lancet,' 1904, vol. i, p. 1378.
- (5) CAMMIDGE.—'Lancet,' 1904, vol. i p. 1750.
- (6) WILLEON.—'Lancet,' 1904, vol. ii, p. 211.
- (7) CAMMIDGE.—'Brit. Med. Journ.,' July, 1904, p. 43.
- (8) GRUNER.—'Brit. Med. Journ.,' 1904, p. 1516.
- (9) LANGDON BROWN.—'Practitioner,' August, 1905.
- (10) MAYO ROBSON.—'Lancet,' December 23, 1905.

I am indebted to Dr. Dudgeon for much kind advice and assistance, also to those members of the staff of St. Thomas's Hospital who have allowed me to refer to their cases.

**PRINTED BY ADLARD AND SON,  
LONDON AND DORKING.**

# St. Thomas's Hospital Medical School.

(UNIVERSITY OF LONDON.)



## PROSPECTUS

FOR THE

YEAR COMMENCING OCTOBER 1st, 1906.



---

1906 & 1907.

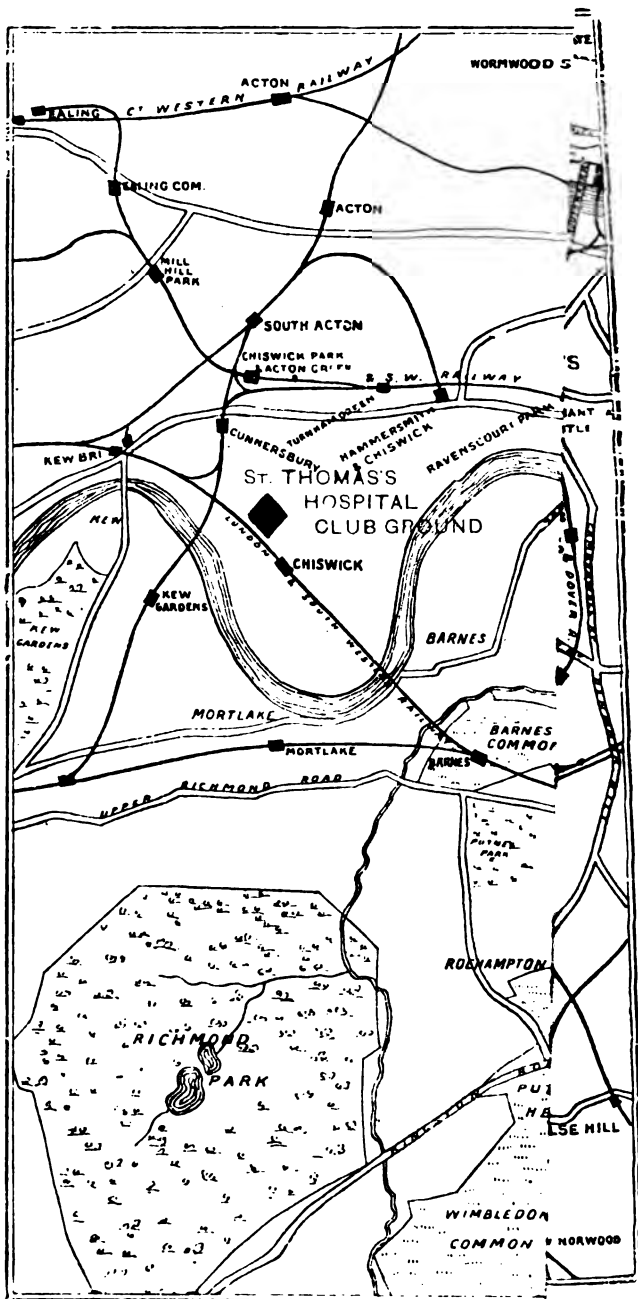
LONDON

PRINTED BY W. P. GRIFFITH & SONS LIMITED,  
*PRUJEAN SQUARE, OLD BAILEY, E.C.*









# CONTENTS.

---

	PAGE
Advice to Students .. .. .	24
Amalgamated Clubs .. .. .	35
Anæsthetists (Time Table) .. .. .	10
Annual Dinner .. .. .	4
Appointments open to Students .. .. .	30, 31
Clinical Instruction .. .. .	10, 11
Course of Study Recommended .. .. .	24, 25, 26
Examinations at Medical School .. .. .	32
Fees, Composition and Special .. .. .	33, 34, 35
Historical Notice of the Hospital .. .. .	5
Hospital, The .. .. .	5, 6, 7
Hospital Practice .. .. .	10, 11
Laboratories, Theatres and Class Rooms .. .. .	11, 12
Lecturers and Demonstrators .. .. .	14
Lectures, Classes and Demonstrations .. .. .	18 to 23
" " Time Tables	15, 16, 17
Library .. .. .	13
Lodgings .. .. .	4
Medical and Physical Society .. .. .	36
Medical and Surgical Officers .. .. .	8
Museums .. .. .	12, 13
Operation Days .. .. .	10
Patients, Number of .. .. .	6
Post-Graduate Study .. .. .	34
Prizes, Medals and Scholarships .. .. .	28, 29, 30
Prize Lists .. .. .	37, 38
Regulations for Students .. .. .	27
School Buildings .. .. .	11, 12
Special Departments .. .. .	7, 9, 11
St. Thomas's Hospital Reports .. .. .	36
Students' Clubs, Social and Athletic .. .. .	13, 35
Tables of Days and Hours of Attendance :—	
" " " in the Wards	9
" " " on the Out-	
" " " Patients ..	9
" " " in the Special	
" " " Departments	9
Tutorial Classes .. .. .	18 to 23
University Classes .. .. .	17

# St. Thomas's Hospital

## MEDICAL SCHOOL.

.....

The WINTER SESSION 1906-1907 will begin on Wednesday October 3rd and end on March 27th.

The SUMMER SESSION will begin on Monday, April 15th, and end in July.

The Prizes will be distributed during the Summer Session, when parents and friends of Students are invited to be present. After the ceremony, a Garden Party will be given on the Terrace and the various Departments of the Hospital and School will be open for the inspection of Visitors.

---

The Annual Dinner, in which all former and present Students are invited to join, will take place at the Hotel Cecil, on Tuesday, October 2nd, at 7 for 7.30

---

For information on all matters relating to the Medical School, Prizes, Scholarships, &c., application should be made to the Secretary to the Medical School, G. Q. ROBERTS, Esq., at the Hospital, Albert Embankment, S.E., personally (10 to 4, Saturday, 10 to 1) or by letter.

The Dean will be glad to have a personal interview with Parents or Guardians of intending Students on Wednesdays at 2 p.m., or by appointment.

The Sub-Dean attends daily, except on Saturdays, between 1 and 2 p.m. to interview Students or their friends with the view to giving advice on courses of study.

A Register of LODGINGS suitable for Students has been recently revised, and is kept in the Secretary's Office. Information as to terms, accommodation, &c., can be obtained on application. This Register has been especially prepared with a view to the convenience of new Students for whose accommodation in lodgings or otherwise no definite arrangements have been made.

Medical Practitioners, Clergymen, and Private Families residing in the neighbourhood receive Students for residence and supervision.





ST. THOMAS'S HOSPITAL, VIEW FROM RIVER.

## ST. THOMAS'S HOSPITAL.

The exact date of the foundation of the first Hospital of St. Thomas is unknown ; but since it was dedicated to St. Thomas à Becket, who was canonised in 1172, and as the building was destroyed by fire in 1207 its origin may be fixed between those two dates. It was the property of the Church, and was situated within the precinct of the Priory of St. Mary Overie, in the Borough of Southwark. After the disaster of 1207 a temporary building was used so that the work of charity did not fail in the 21 years which elapsed before the new Hospital was ready for use. In 1228, the new building, in close proximity to the old, but on the other or eastern side of the road, received its charter, in which it is worth noting that it was described as "ye ancient Spital." In the year 1538 the Hospital, still known as St. Thomas à Becket's Spital, was surrendered to King Henry VIII. at the time of the general confiscation of church properties. Evidence of the good work which the old Hospital had been doing is clearly given by the fact that the necessity for its re-establishment soon made itself felt, and was satisfied only by the issue of a new charter with re-endowments and privileges in the year 1553 under the hand of King Edward VI. At the same time its dedication was transferred from St. Thomas à Becket to St. Thomas the Apostle.

From its foundation to the year 1862 the Hospital occupied its old site, but in that year the property was sold for the railway extension and the transfer to the present position was shortly after carried into effect.

The present buildings occupy an imposing position on the Surrey or south bank of the river, facing the Houses of Parliament, while their opposite aspect overlooks one of the poorest districts in London. Between the poverty-stricken streets of Lambeth and the Hospital there lies, however, a considerable tract of ground which was formerly attached to Lambeth Palace and was generously given for the use of the public by the Archbishop of Canterbury. Just beyond the extreme limit of the Hospital is the Palace itself. These few words will show how uniquely suited is the site to the character of the institution. On the one side it faces the wealth of the west, on the other the squalor of the east, while the river on the one side and the public park on the other provide the free access of light and air which are absolutely essential for the welfare of the sick. The foundation stone was laid by her late Majesty Queen Victoria in the year 1868, and the buildings were declared open by her on their completion in 1871. The cost was approximately £600,000, a large sum, certainly, but hardly excessive when it is realised that the frontage of the edifice is no less than 570 yards in length, and that the very advantages of its position rendered necessary an adequate architectural treatment which in fact was one of the conditions of the purchase of the site.

The Hospital, the first to be built in accordance with modern ideas, consists of a series of blocks separate from each other but connected by corridors open to the air on all sides. Between the blocks are grassy quadrangles, and along the whole front is a broad terrace over-

looking the river and overshadowed by trees, to which both patients and students have free access.

Six of the blocks are devoted to the use of patients, one is applied to administrative purposes and also includes the Treasurer's Residence and one constitutes the Medical School. The wards, with the exception of four which are placed on the ground floor, occupy the first, second, and third floors. Each ward affords accommodation for 28 beds which are placed against the piers between the windows so as to secure thorough ventilation. In a small ward attached to each large one there are two beds for cases requiring special care or treatment.

The present hospital contains in all 603 beds which are distributed as follows. About 210 beds are appropriated to medical and 270 to surgical cases respectively. There are separate wards for the treatment of diseases peculiar to women (30 beds); of diseases of the eye (25 beds); and of children under 6 years of age (34 beds); and for the reception of casualty cases (22 beds). In one of the blocks, isolated from the rest of the establishment, there are wards for infectious diseases.

The space provided for each bed in the ordinary wards is upwards of 1,800 cubic feet, and in the block appropriated to infectious diseases about 2,500 cubic feet.

The recent extensive structural alterations have resulted in the addition of 30 beds to the Hospital, and in addition a Nurse's Home affording accommodation for 185 Nurses has just been completed. These are in two wards of 15 beds each and are utilized for medical and surgical diseases of children. There are now four chief Operation Theatres for the Surgical Wards. These have marble floors, walls and seats, and are lighted and equipped in the most modern way. There is a complete set of anæsthetizing, sterilizing, dressing and recovery rooms attached to each pair of theatres, which with the new wards are supplied by the Plenum system with filtered air. Besides these there are five other fully-equipped theatres for operations in the various departments of the Hospital.

During the twelve months ending December 31st, 1905, the number of patients admitted into the Hospital amounted to 6,451. In the same period, 20,791 out-patients have been treated, and in the Maternity Department, 1,941 women have been attended at their own homes. Casualties, to the number of 116,116 attendances, were treated during the same period.

The Department for Out-patients has been rearranged and is now well adapted both for the treatment of patients and for teaching purposes.

Large rooms for the use of the Physicians and Surgeons to Out-patients open directly on to the main waiting room. These are well lighted and ventilated, and are provided with ample sitting accommodation in raised tiers, so that large numbers of students can follow the methods of examination and treatment employed by the Physicians and Surgeons on duty.

There is also a series of rooms for dressing surgical cases and for the use of the various special departments, including a completely fitted gymnasium for the employment of Physical Exercises in treatment.



A complete Operation Theatre with modern fittings is attached to the Department for the sole use of the Out-patient Staff and their Assistants and of the various Special Departments.

The new **Casualty Department** comprises a spacious receiving hall which runs the whole length of the department, and from which on the one side, open out the male and female sorting and waiting rooms, whilst on the other are a number of smaller rooms for the examination and treatment of patients. Isolation rooms for infectious cases are placed outside the lodge door.

The whole department is tiled, efficiently lighted and fitted throughout on the most modern lines. The ventilation is on the Plenum system. In connection with it there are an Accident Ward of 20 beds for the reception of urgent male cases, a small but complete operation theatre, and two isolation wards.

The **Ophthalmic Department** has been rebuilt and comprises a large and light Consulting Room for out-patients, a well-arranged dark room for Ophthalmoscopic examinations, and a small, well-equipped Operating Theatre.

The **Röntgen Ray Department** has proved of such value to the Hospital that it has been found necessary to considerably increase its accommodation and at the same time widen its scope so as to include the latest applications of electricity both for diagnosis and treatment. The new department has a number of separate rooms for the application of the Finsen light treatment of lupus and other skin diseases, for electric light baths, electric water baths, and for the use of high frequency and high tension currents.

The **Louis Jenner Clinical Laboratory**, which is distinct from the pathological laboratories in the Medical School, is situated on the east side of the Hospital. This laboratory, established in the year 1897 and now named in memory of its first superintendent, is provided with every facility for bacteriological, microscopical, and chemical examinations which may throw light on the condition of patients in the wards. The investigations are carried on in the Laboratory by the Superintendent, and the Assistant Superintendent, with the aid of a staff of assistants who are chosen from the students of the Hospital. All those methods of examination which from their difficulty or complexity are impracticable at the bedside, are here carried out under conditions which secure a complete scientific record of each patient.

The **Clinical Lecture Theatre** is reserved entirely for the delivery of Clinical Lectures and Demonstrations. Its central position in the Hospital makes it possible to illustrate the lectures by patients from the wards and out-patient rooms. Provision is made also for the exhibition of lantern slides, where patients may not be available. The Theatre has also been specially fitted for ophthalmological, laryngological, or microscopical demonstrations. Throughout the academical year Clinical Lectures are delivered here on Medicine, Surgery, and the various special branches of study (see p. 10).

## MEDICAL AND SURGICAL OFFICERS.

**Consulting Physicians.**—JOHN HARLEY, M.D. Lond., J. F. PAYNE, M.D. Oxon.

**Consulting Surgeons.**—SYDNEY JONES, M.B. Lond.

**Consulting Obstetric Physicians.**—H. GERVIS, M.D. Lond.

C. J. CULLINGWORTH, M.D., Hon. D.C.L. Durh., Hon. LL.D. Aberd.

**Consulting Ophthalmic Surgeons.**—R. LIEBREICH; E. NETTLESHIP.

**Consulting Anaesthetist.**—WALTER TYRRELL.

### Physicians.

S. J. SHARKEY, M.A., M.D. Oxon.  
T. D. ACLAND, M.A., M.D. Oxon.  
H. P. HAWKINS, M.A., M.D. Oxon.  
H. W. G. MACKENZIE, M.A., M.D.  
Cantab.

### In Charge of Out Patients.

H. G. TURNEY, M.A., M.D. Oxon.  
J. J. PERKINS, MA., M.B. Cantab.  
W. S. COLMAN, M.D. Lond.  
C. R. BOX, B.Sc., M.D., B.S. Lond.

### Surgeons.

H. H. CLUTTON, M.A., M.C. Cantab.  
B. PITTS, M.A., M.C. Cantab.  
G. H. MAKINS, C.B.  
W. H. BATTLE  
C. A. BALLANCE, M.S. Lond.  
H. B. ROBINSON, M.S. Lond.  
C. S. WALLACE, B.S. Lond.  
E. M. CORNER, M.A., B.C. Cantab.  
P. W. G. SARGENT, M.A., M.B., B.C.  
Cantab.

## SPECIAL DEPARTMENTS.

*Obstetric.*—W. W. H. TATE, M.D., Lond.; *Ophthalmic.*—J. B. LAWFORD;  
Out Patients.—J. S. FAIRBAIRN, M.A., Out Patients.—J. H. FISHER, B.S.  
M.B., B.Ch. Oxon. Lond.

*Diseases of Skin.*—E. STAINER, M.A., M.B. Oxon. *Diseases of Throat.*—H. B. ROBINSON,  
M.S. Lond.

*Diseases of Children (medical).*—C. R. Box, B.Sc., M.D., B.S. Lond. *Diseases of Ear.*—C. A. BALLANCE,  
M.S. Lond.; Out Patients.—H. J.

*Diseases of Children (surgical).*—P. W. G. SARGENT, M.A., M.B., B.C. Cantab. *MARRIAGE*, B.S. Lond.

*Electro-Diagnosis.*—H. G. TURNEY, M.A., M.D. Oxon. *Physical Exercises.*—R. TIMBERG.

*Mental Diseases.*—PERCY SMITH, M.D. Lond. *Dental.*—J. G. TURNER, F.R.C.S.,  
L.D.S.; G. L. BATES, M.R.C.S.,  
L.D.S.

### Resident Assistant Physician.

W. H. HARWOOD-YARRED, M.B., B.Sc. Lond.

### Resident Assistant Surgeon.

C. A. R. NITCH, M.S. Lond., F.R.C.S.

### Anaesthetists.

H. LOW, M.A., M.B., B.C. Cantab. Z. MENNELL, M.B. Lond.  
A. BEVAN, M.D. Lond. E. W. HEDLEY, M.A., M.D., B.C. Cantab.

### Demonstrators of Morbid Anatomy.

C. R. BOX, M.D., B.Sc. B.S. Lond. W. L. HARNETT, B.A., M.B., B.C. Cantab.

### Consulting Chemist.

H. R. LE SUEUR, D.Sc., F.I.C.

### Pharmacist.

HAROLD WILSON, B.Sc. Lond.

Director of the Hospital Laboratories and Bacteriologist to the Hospital.

L. S. DUDGEON, M.R.C.P. Lond.

### Superintendent of the X Ray Department.

A. H. GREG, M.A., M.B., B.C. Cantab.

### Registrars.

#### Medical.

H. R. DEAN, B.A., J. E. ADAMS, M.B., B.S. Lond.,  
M.B., B.Ch. Oxon., M.R.C.P. Lond.

#### Surgical.

F.R.C.S.

#### Obstetric.

R. H. BELL, M.A., M.B.,  
B.C. Cantab., M.R.C.P.

### Curator of the Museum and Pathologist.

S. G. SHATTOCK, F.R.C.S.

### Librarian.

G. RENDLE, M.R.C.S.

### Dean of the School.

J. H. FISHER, M.B., B.S. Lond.

### Sub-Dean.

C. R. BOX, B.Sc., M.D. B.S. Lond.

### Oxford.

J. S. FAIRBAIRN, M.A.,  
M.B., B.Ch. Oxon.

### Tutors. Cambridge.

P. W. G. SARGENT, M.A.,  
M.B., B.C. Cantab.

### London.

C. R. BOX, B.Sc., M.D.,  
B.S. Lond.

### Secretary to the School.

G. Q. ROBERTS, M.A. Oxon.

# CLINICAL TEACHING BY THE PHYSICIANS AND SURGEONS IN THE WARDS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. SHARKEY .....	—	2	—	—	2	—
DR. ACLAND.....	2	—	—	2	—	—
DR. HAWKINS.....	2	—	—	2	—	—
DR. MACKENZIE .....	—	2	—	—	2	—
DR. TATE .....	—	2	—	—	2	—
MR. CLUTTON .....	—	—	9	—	—	—
MR. PITTS .....	2	—	—	2	—	—
MR. MAKINS .....	—	—	—	2	—	—
MR. BATTLE .....	—	2	—	—	2	—
MR. LAWFORD .....	—	2	—	—	2	—
MR. BALLANCE .....	—	2	—	—	—	—

## TIMES OF ATTENDANCE OF THE ASSISTANT-PHYSICIANS AND ASSISTANT-SURGEONS IN THE OUT-PATIENTS' ROOMS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
DR. TURNEY .....	—	1.30	—	—	1.30	—
DR. PERKINS .....	1.30	—	—	1.30	—	—
DR. COLMAN .....	—	—	1.30	—	—	1.30
MR. ROBINSON .....	1.30	—	—	1.30	—	—
MR. WALLACE .....	—	1.30	—	—	1.30	—
MR. CORNER .....	—	—	1.30	—	—	1.30

## TIMES OF ATTENDANCE IN THE OUT-PATIENT SPECIAL DEPARTMENTS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
MR. LAWFORD } (Diseases of	—	1.30	—	1.30	1.30	—
MR. FISHER } the Eye) {	1.30	—	1.30	—	—	—
DR. FAIRBAIRN (Diseas. of Women)	1.30	—	1.30	—	—	—
DR. BOX (Diseases of Children) ..	—	—	10	—	—	10
MR. SARGENT (Surgical ditto) .....	—	—	10	—	—	10
MR. ROBINSON (Diseases of Throat)	—	—	1.30	—	—	—
DR. STAINER (Diseases of Skin)....	—	1.30	11	—	1.30	—
MR. MARRIAGE (Diseases of Ear)..	1.30	—	—	1.30	—	—
DR. TURNEY (Electro-Therapeutics)	—	—	2	—	—	—
DR. GREG (X Ray) .....	—	2	—	—	2	—
MR. J. G. TURNER { (Diseases	—	—	—	9	9	—
MR. G. L. BATES { of Teeth) }	—	9	—	—	—	9
DR. COPE (Vaccination) .....	—	10.30	—	—	—	—
DR. PERCY SMITH (Mental	—	10	—	—	—	—
Diseases) .....	—	—	—	—	—	—
MR. TIMBERG (Physical Exercise)	1.30	—	1.30	—	1.30	—

## SPECIAL DAYS AND HOURS FOR SURGICAL OPERATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Surgical Operations.....	2.0	2.0	2.0	2.0	2.0	—
Gynæcological „ .....	—	—	—	2.0	—	—
Eye „ .....	—	—	—	2.0	—	—
Throat „ .....	—	—	—	—	9.30	—
Ear „ .....	—	—	9.30	—	—	—

## DAYS OF ATTENDANCE OF THE ANÆSTHETISTS.

Departments.	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
<i>Operating Theatre.</i> { Mr. CLUTTON Mr. PITTS..... Mr. BALLANCE } Mr. MAKINS... Mr. BATTLE ...	Dr. Hedley	Dr. Low Dr. Hedley	Dr. Bevan Dr. Hedley Dr. Low Dr. Mennell	Dr. Mennell	Dr. Bevan	
GYNÆCOLOGICAL WARD .....				Dr. Bevan		
EYE DEPARTMENT				Dr. Low		

## POST-MORTEM EXAMINATIONS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Dr. FOX .....	2.0	2.0	—	2.0	2.0	—
Dr. HARNETT.....	—	—	2.0	—	—	10.0

## HOSPITAL PRACTICE.

## CLINICAL TEACHING OF MEDICINE AND SURGERY.

CLINICAL instruction is given daily by the Physicians and Surgeons during their visits to the Wards, and by the Physicians and Surgeons in the Out-Patient Departments (Time Table, p. 9).

## CLINICAL LECTURES.

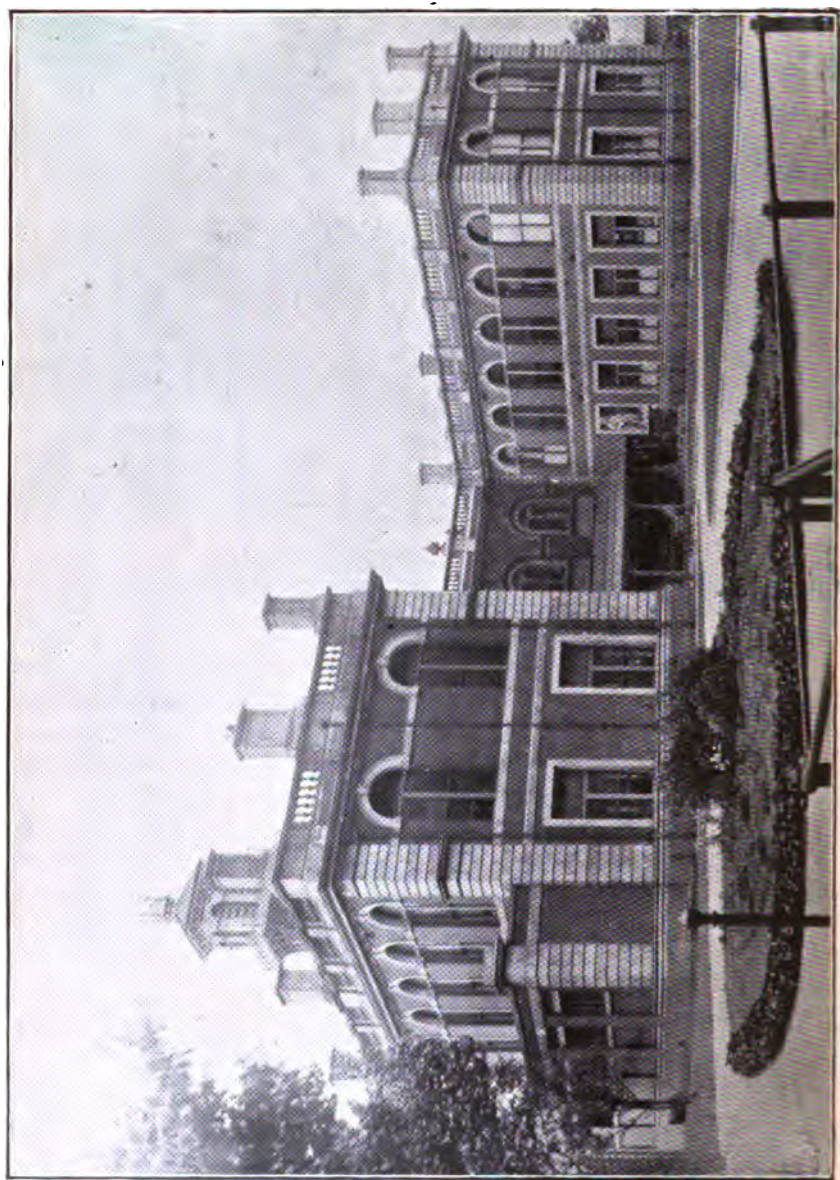
These are given throughout the sessions as follows, each lecture being so far as possible, illustrated by cases :—

Medicine ... .. Wednesday at 2.

Surgery ... .. Thursday at 2.

The Clinical Lectures at 2 o'clock on Wednesdays and Thursdays include a series of lectures or demonstrations given in connection with the Special Departments.





MEDICAL SCHOOL, NORTH VIEW.

*To face p. 11.*

**Diseases of Women.**—Clinical instruction is given in Adelaide Ward on Tuesdays and Fridays at 2 p.m., and in the Out-Patient room on Mondays and Wednesdays at 1.30 p.m.

**Medical and Surgical Diseases of Children.**—Instruction is given in the Out-Patient rooms on Wednesdays and Saturdays at 10 a.m.

**Midwifery.**—A maternity department, under the supervision of the Assistant Obstetric Physician, is connected with the hospital, women being attended in confinement at their own homes by students of the hospital, (p. 31). Students are accompanied to their first five cases by one of the Obstetric House Physicians.

**Diseases of the Eye.**—Patients are seen and Clinical Instruction is given in the Out-Patient rooms daily at 2 p.m., except Saturday, thus giving exceptional facilities for the study of eye disease (Time Table p. 9). Clinical Lectures or Ophthalmoscopic Demonstrations weekly.

**Diseases of the Skin.**—Clinical instruction on Tuesdays at 2 p.m., Wednesdays at 11 a.m., and Fridays at 2 p.m. Wednesday mornings are devoted to children.

**Diseases of the Throat.**—Clinical instruction on Wednesdays at 2 p.m. During the Winter Session a short course of Lectures is given to senior students.

**Diseases of the Ear.**—Clinical instruction on Mondays and Thursdays at 2 p.m. During the Winter Session a short course of Lectures is given to senior students.

**Mental Diseases.**—Clinical instruction on Tuesdays at 10.30 a.m., in the Out-Patient department, and also at 11 a.m. on Saturdays during the Summer Session at Camberwell House Asylum.

**Diseases of the Teeth.**—The Dental Surgeons give instruction in Dental Surgery on Tuesdays, Thursdays, Fridays and Saturdays at 9 a.m. Every three months a short course of teaching on dental emergencies is given.

**Vaccination** is taught practically by Dr. COPE, on Tuesdays at 10.30 a.m., who is authorised by the Local Government Board to give certificates of proficiency in Vaccination at St. Thomas's Hospital. (Fee, see p. 35).

**Electro-Diagnosis and Therapeutics.**—Instruction is given on Wednesdays at 2 p.m.

**Physical Exercise.**—Instruction is given in the Department on Mondays, Wednesdays and Fridays at 1.30 p.m.

**Anæsthetics.**—A short course of lectures is given during each session by the Consulting Anæsthetist and the Senior Anæsthetist. Students are appointed clerks to the anæsthetists for practical instruction in the mode of administration.

---

## THE MEDICAL SCHOOL.

The School buildings, isolated by a large quadrangle from the Hospital, stand at its southern extremity, between the river and the gardens of Lambeth Palace. They are very commodious, and every effort has been made to provide accommodation completely fulfilling modern requirements. With this object additions and alterations on a considerable scale were made in the years 1885, 1892 and 1894. A few words may be said of the chief departments.

THE CHEMICAL DEPARTMENT is complete in itself. In addition to large laboratories for class purposes there are private ones for advanced and research work. The department has its own lecture theatre, opening out of one of the laboratories.

**THE PHYSICS LABORATORY** is well provided with apparatus for practical instruction in that science.

**THE ANATOMICAL DEPARTMENT.**—The dissecting room is large and well-lighted. Its walls are hung with a number of anatomical illustrations in colours. In addition to the main dissecting room there is a small prosector's room. The lecture theatre has seating accommodation for about 200, and was specially built for the purpose.

**THE PHYSIOLOGICAL DEPARTMENT** is constructed on similar lines to the chemical, with large class laboratories, research laboratories and every equipment in the way of apparatus.

**THE PATHOLOGICAL DEPARTMENT.**—The entire West Wing of the Medical School Buildings is now devoted to Pathology, and includes both general and research laboratories.

The First Floor is used for demonstrations, and contains a large class laboratory with accommodation for seventy or eighty students in which the practical classes in Pathology and Bacteriology are held. Extensive improvements have recently been made in the lighting and fittings.

The Ground Floor is occupied by the Hospital Laboratory of Pathology, which has recently been established by the Governors, and is reserved for extended investigations of the pathological material derived from the post mortem room of the Hospital. Besides the main laboratory, subsidiary workrooms are provided, and the whole is completely equipped for all purposes of microscopical, chemical and bacteriological research. For details of the Clinical Laboratory see page 7.

The whole is under the charge of a Director, and is open to Senior Students who are encouraged to follow out special lines of research.

The POST-MORTEM ROOM AND MORTUARY are provided with Cold Storage and ventilated by the electric fan.

---

## THE MUSEUMS.

*Curator.*—S. G. SHATTOCK, ESQ., F.R.C.S.

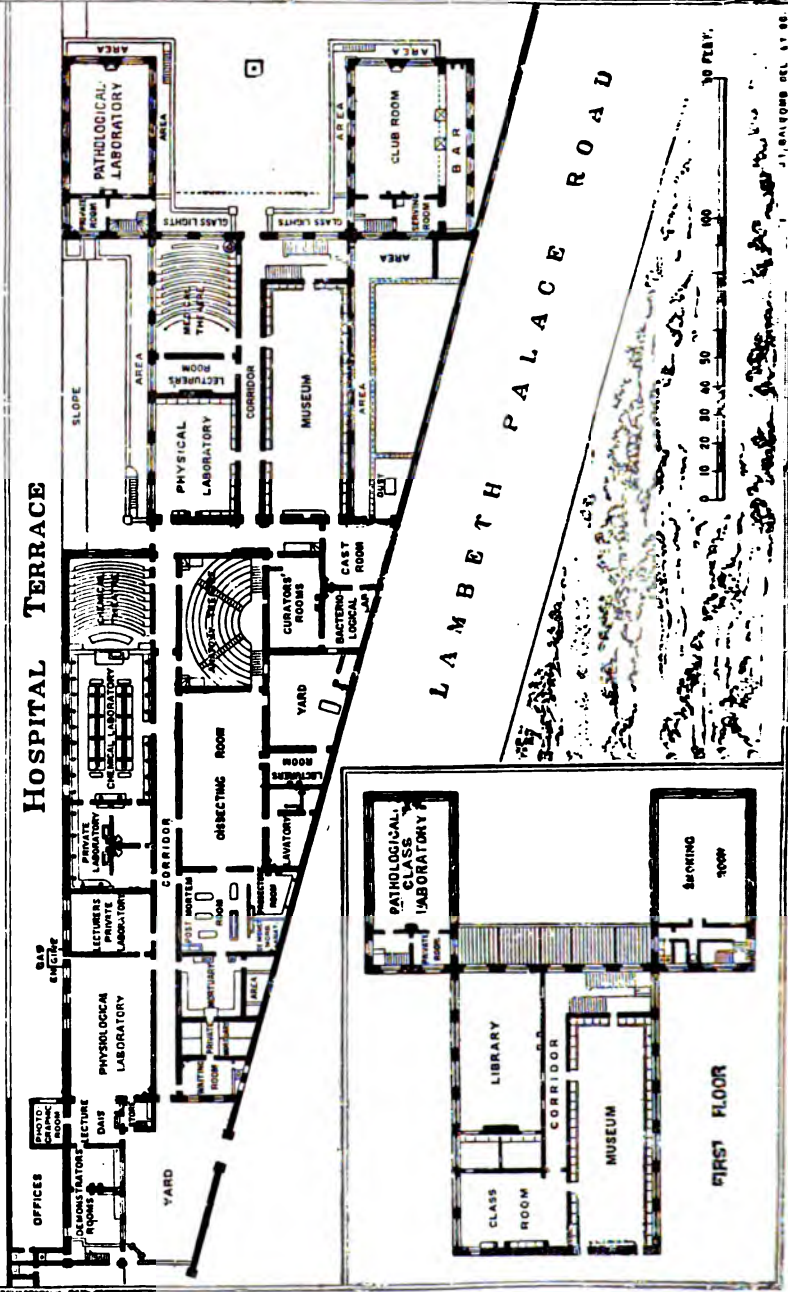
**THE PATHOLOGICAL COLLECTION** contains above 3,000 preparations, and illustrates all the morbid lesions of importance met with in the various organs of the body. The preparations are selected, arranged and catalogued with the object of enabling the student to become familiar with the essentials of Pathological Anatomy. The present descriptive catalogue has been entirely re-written by Mr. Shattock.

The Collection includes many specimens of historical interest, such, *e.g.*, as those used by Sir A. Cooper to illustrate his works on Dislocations and Fractures, on Hernia, and diseases of the Testis; as well as two preparations showing the result of ligature of the Abdominal Aorta, and Mr. Travers's preparations exhibiting the natural process of repair of Injuries of the Intestines, and results of the experimental ligature of Arteries. The section of Fractures contains numerous examples of gun-shot injuries, obtained from cases under the care of Sir William MacCormac during the Franco-German War (1870).





HOSPITAL TERRACE



LAMBETH PALACE ROAD

0 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400 410 420 430 440 450 460 470 480 490 500 510 520 530 540 550 560 570 580 590 600 610 620 630 640 650 660 670 680 690 700 710 720 730 740 750 760 770 780 790 800 810 820 830 840 850 860 870 880 890 900 910 920 930 940 950 960 970 980 990 1000

GROUND PLAN.

To face p. 13.

THE COLLECTION OF HUMAN ANATOMY contains a large number of dissected Preparations, illustrating the individual Organs and in addition a series of elaborate dissections.

THE COLLECTION OF COMPARATIVE ANATOMY comprises about 400 dissected Preparations, and in addition an equal number of osteological specimens. A large proportion of these dissections were made by Sir A. Cooper, to illustrate his Lectures, when Professor of Comparative Anatomy to the Royal College of Surgeons.

A catalogue of this Collection has been drawn up by Mr. F. G. Parsons.

THE MARBLE BUST OF MORGAGNI in the Museum was the gift of an Italian Committee, which included the chief Professors at the various Italian Universities. It was formally presented to the Hospital by the Italian Ambassador in October, 1899.

THE MATERIA MEDICA MUSEUM contains a complete collection of the inorganic and organic substances included in the British Pharmacopœa; all these are named and numbered. A second collection of the chief medicinal substances is placed in drawers and is freely accessible to students.

The Museum is under the conjoint superintendence of the Lecturer on Pharmacy and Pharmacology and Mr. Shattock.

THE COLLECTION OF CHEMICAL AND MINERALOGICAL SPECIMENS is under the superintendence of Dr. Le Sueur. The majority of the specimens were presented by the late Dr. Bernays.

The Museums are open daily from 9 a.m. till 5 p.m.

## THE LIBRARY AND READING ROOM.

*Librarian* :—G. RENDLE, ESQ.

The Library, which overlooks the river, is quiet, spacious and well ventilated. It has been recently completely re-arranged and re-catalogued. It contains a valuable collection of standard works, both old and new. A supply of current text-books is kept, so that a student has every inducement to fully occupy his time while in the Medical School. Various medical and scientific periodicals are taken in.

## THE STUDENTS' CLUB.

Though it is not directly an educational institution it deserves mention here because there is no doubt that its indirect influence is considerable. It removes any possible excuse for the student absenting himself from the school during working hours, and it encourages the development of that *esprit de corps* which is so much to be desired.

It occupies the East Wing of the Medical School buildings, and consists of two noble rooms, each of which is over fifty feet in length, and of proportionate width. On the ground floor is the Restaurant, which is under the control of a combined committee of Staff and Students. On the first floor is a magnificent reading and smoking room, which is provided with the current literature of the day, and has just been re-furnished.

## LECTURERS AND DEMONSTRATORS

### LECTURERS.

<i>Biology</i> ... ..	Mr. HILL.
<i>Chemistry and Practical Chemistry</i> ...	Dr. LE SUEUR.
<i>Physics</i> ... ..	Mr. WATKIN.
<i>Descriptive Anatomy</i> ... ..	Mr. PARSONS.
<i>General Anatomy and Physiology</i> ...	} Dr. LEATHES.
<i>Practical Physiology and Histology</i> ...	
<i>Midwifery and Diseases of Women</i> ...	Dr. TATE.
<i>Practical and Manipulative Surgery</i> ...	Mr. ROBINSON and Mr. WALLACE.
<i>Applied Anatomy</i> ... ..	Dr. BOX.
<i>Medicine</i> ... ..	Dr. SHARKEY and Dr. HAWKINS.
<i>Surgery</i> ... ..	Mr. MAKINS and Mr. BALLANCE.
<i>General Pathology and Bacteriology</i>	Mr. SHATTOCK and Mr. DUDGEON.
<i>Special Pathology</i> ... ..	Mr. DUDGEON.
<i>Forensic Medicine and Toxicology</i> ...	Dr. COLMAN.
<i>Pharmacology and Therapeutics</i> ...	Dr. PERKINS.
<i>Diseases of the Eye</i> ... ..	Mr. LAWFORD.
<i>Tropical Diseases</i> ... ..	Dr. SANDWICH.
<i>Mental Diseases</i> ... ..	Dr. PERCY SMITH.
<i>Public Health and Sanitary Science</i> ...	Dr. SEATON.
<i>Clinical Medicine</i> ... ..	The PHYSICIANS.
" <i>Gynaecology</i> ... ..	Dr. TATE.
" <i>Surgery</i> ... ..	The SURGEONS.
" <i>Ophthalmic</i> ... ..	Mr. LAWFORD.
<i>Comparative Anatomy</i> ... ..	Mr. PARSONS.
<i>Anæsthetics</i> ... ..	Mr. TYRRELL and Dr. LOW.

### TEACHERS AND DEMONSTRATORS.

<i>Chemistry and Practical Chemistry</i> ...	Dr. LE SUEUR and Dr. HAAS.
<i>Practical Pharmacy</i> ... ..	Mr. HAROLD WILSON.
<i>Practical Anatomy</i> ... ..	Mr. PARSONS and Mr. SARGENT.
<i>Physiology and Practical Physiology</i> ...	{ Dr. LEATHES, with Mr. CUNNINGHAM.
<i>Toxicology</i> ... ..	Dr. HAAS.
<i>Practical Medicine</i> ... ..	{ Dr. PERKINS, Dr. COLMAN, and Dr. BOX, with Dr. DEAN.
<i>Practical and Manipulative Surgery</i> ...	Mr. ROBINSON and Mr. WALLACE.
<i>Operative Surgery</i> ... ..	{ Mr. BATTLE, Mr. ROBINSON, and Mr. WALLACE.
<i>Practical Obstetrics</i> ... ..	Dr. FAIRBAIRN, with Dr. BELL.
<i>Electro-Therapeutics</i> ... ..	Dr. TURNEY.
<i>Morbid Anatomy</i> ... ..	Dr. BOX and Dr. HARNETT.
<i>Morbid Histology and Bacteriology</i> ...	Mr. SHATTOCK and Mr. DUDGEON.
<i>Clinical Pathology</i> ... ..	Dr. PANTON.
<i>Diseases of the Eye</i> ... ..	Mr. FISHER.
" <i>Children</i> ... ..	Dr. BOX and Mr. SARGENT.
" <i>Throat</i> ... ..	Mr. ROBINSON.
" <i>Skin</i> ... ..	Dr. STAINER.
" <i>Ear</i> ... ..	Mr. MARRIAGE.
" <i>Teeth</i> ... ..	Mr. TURNER and Mr. BATES.
<i>Vaccination</i> ... ..	Dr. COPE.
<i>Physical Exercises</i> ... ..	Mr. TIMBERG.

## DAYS AND HOURS OF LECTURES AND DEMONSTRATIONS.

## WINTER SESSION.

## FIRST YEAR.

		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Biology, p. 18	{ Lectures .....	2	9.30	—	—	2	—
	{ Practical Work .....	3-5	10 $\frac{1}{2}$ -12	—	—	3-5	—
Chemistry, p. 18	{ Lectures .....	12	—	12	—	12	—
	{ Practical Work .....	10-12 Jan.— Mar.	—	—	2-5	—	—
Physics, p. 18	{ Lectures .....	—	—	9.30	12 Jan.— Mar.	9.30	—
	{ Practical Work .....	—	2-4 $\frac{1}{2}$ Jan.— Mar.	—	—	—	—

## SECOND AND THIRD YEARS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Descriptive Anatomy, p. 18 .....	9.30	9.30	9.30	9.30	9.30	—
Anatomical Demonstrations, p. 18 .....	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -4 $\frac{1}{2}$	10 $\frac{1}{2}$ -1
Physiology, p. 19 .....	10.45	—	10.45	—	10.45	—
Practical Physiology, p. 19 (third year) .....	—	—	11.45	—	11.45	—
Pharmacology, p. 20 (third year) .....	—	4 Oct.— Dec.	—	—	4.30 Oct.— Mar.	—

## FOURTH YEAR.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Medicine, p. 20 { 1st and 3rd six weeks...	12.30	—	12.30	—	—	—
Surgery, p. 21 { 2nd and 4th six weeks...	—	4	12.30	—	12.30	—
General Pathology and Bacteriology, p. 21	9	—	—	9	—	9
	—	12 Demonstration	—	12.30	—	—
Special Pathology, Mr. Dudgeon .....	12 and six weeks.	—	—	—	12 1st six weeks.	—
Pathological Demonstrations { In the Post-Mortem Room	2	2	2	2	2	10
Pharmacology and Therapeutics, p. 20 ...	5 Oct.— Dec.	—	—	4 Oct.— Dec. Dem.	5 Oct.— Dec.	—
Practical Surgery { Mr. Wallace, Oct.— Dec. .... Mr. Robinson, Jan.— March .....	—	9	—	—	—	—
Obstetric Demonstrations (six), p. 20 ...	—	—	4.30	—	—	—

For Time Table (Preliminary Scientific and Intermediate M.B.) see p. 17.

\* NOTE.—The Pathological demonstration on Saturday follows the Lecture and is partly on the post-mortem material of the week and partly in illustration of the lecture. It is both microscopical and macroscopical.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Medicine, p. 20 { 1st and 3rd six weeks ...	12. 30	—	12. 30	—	—	—
2nd and 4th six weeks...	—	4	12. 30	—	12. 30	—
Surgery, p. 21 .....	9	—	—	9	—	9
Diseases of Women, p. 20 Jan., Feb., Mar.	—	—	9	—	9	—
Diseases of the Eye, p. 23 .....	4	—	—	—	—	—
Applied Anatomy, p. 19, Jan., Feb., Mar.	—	—	4	—	—	—

**SUMMER SESSION.**

### FIRST YEAR.

		Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Biology, p. 18	Lectures .....	2	9.30	—	10.30	2	—
	Practical Work.....	3-5	10-12	—	11½-1	3-5	—
Chemistry, p. 18	Lectures .....	12	—	12	—	—	—
	Practical Work.....	10-12	—	—	2-5	—	—
Physics, p. 18	Lectures .....	—	—	9½ & 11	—	9.30	—
	Practical Work.....	—	2-4½	—	—	—	—

## SECOND YEAR.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Practical Pharmacy (Demonstrations), p. 20	—	2	—	12	—	—
Practical Instruction in Pharmacy .....	10	—	—	—	—	9.30
Physiology, p. 19 { Lecture .....	—	9	—	9	9	—
Practical Histology ..	—	10—12	10—12	10—12	—	—

### THIRD YEAR.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Anatomical Demonstrations, p. 18.....	11-4	11-4	11-4	11-4	11-4	11-1
Physiology, p. 19.....	—	9	—	9	9	—

#### FOURTH AND FIFTH YEARS.

	Mon.	Tues.	Wed.	Thurs.	Fri.	Sat.
Midwifery, p. 20 .....	—	9	9	9	9	—
Special Pathology and Bacteriology .....	—	—	—	—	—	11.30
Bacteriology (second half Session), p. 21	12	—	12	—	—	—
Forensic Medicine, p. 22 .....	4.30	12	—	4.30	—	9
Mental Diseases, p. 22 .....	—	—	—	12.30	—	11—1
Tropical Diseases (commencing in May)	—	—	4.30	—	—	—
Public Health, p. 23.....	—	—	—	—	12	—
Diseases of the Eye, p. 23 .....	—	4.30	—	—	—	—

(For Clinical Lectures, see p. 10.)

# UNIVERSITY OF LONDON.

## PRELIMINARY SCIENTIFIC EXAMINATION, Part I.

		Mon.	Tues.	Wed.	Thu.	Fri.	Sat.
Chemistry. H. R. LE SUEUR, D.Sc. Lond. and P. HAAS, D.Sc. Lond.	Lectures .....	12.0	12.0	12.0 Win. 10.30 Sum.	—	12.0 Oct.— Mar.	—
	Practical Work .....	10-12	—	—	2-5	—	10-1 Oct.— Dec.
Physics. P. I. WATKIN, M.A.	Lectures (Winter) .....	—	—	9.30	—	9.30	—
	„ (Summer) .....	—	—	9.30	9.30	9.30	—
	Practical Work (Winter and Summer) .....	—	1½-5½	—	—	—	—
Biology. T. G. HILL, A.R.C.S.	Lectures (Winter) .....	2.0	9.30	—	—	2.0	—
	„ (Summer) .....	2.0	9.30	—	10.30	2.0	—
	Practical Work (Winter)...	3-5	10½-12	—	—	3-5	—
	„ (Summer) .....	3-5	10½-12	—	11½-1	3-5	—

N.B.—A Microscope and simple Dissecting Apparatus must be provided by each Member of the Class, and Four Guineas are charged for materials.

## PRELIMINARY SCIENTIFIC EXAMINATION, Part II.

		Mon.	Tues.	Wed.	Thur.	Fri.	Sat.
Organic Chemistry. H. R. LE SUEUR, D.Sc. Lond. and P. HAAS, D.Sc. Lond.	Lectures (Jan.—July) .....	12.0	12.0	—	12.0	—	—
	Practical Work (Jan.—July)	—	2-5	—	—	—	—

## INTERMEDIATE EXAMINATION IN MEDICINE.

		Mon.	Tues.	Wed.	Thu.	Fri.	Sat.
Anatomy. F.G. PARSONS, F.R.C.S. P.W. SARGENT, F.R.C.S.	Lectures (Winter) ...	9.30	9.30	9.30	9.30	9.30	—
	Special Classes .....	Twice a week (Win.) 4 times a week (Sum.) Daily					
Dissections .....							
Physiology. J. B. LEATHES, M.B. B.Ch. Oxon., F.R.C.S.	Lectures (Winter) ...	10.45	—	10.45	—	10.45	—
	„ (Summer) ...	—	9.0	9.0	9.0	—	—
	Practical Work (Win.)	—	10.45	11.45	10.45	11.45	—
„ (Sum.)		2.0	10-12	10-12	10-12	—	—
Pharmacology. J. J. PERKINS, M.B. Cantab. A. E. RUSSELL, M.D. Lond.	Lectures (Oct.—Dec.)	5.0	—	—	—	5.0	—
	Demonstrations (Oct.—Dec.)...	—	—	—	4.0	—	—
Practical Pharmacy and Materia Medica. H. WILSON, B.Sc. Lond.	Practical Work (Sum.)	—	—	—	—	9.30 — 11	9.30 — 11
	Demonstration (Sum.)	—	—	2.0	12.0	2.0	—

## LECTURES, CLASSES, & DEMONSTRATIONS.

*A complete list of Lecturers and Demonstrators, p. 14.*  
*Time-table of days and hours of Lectures, &c., p. 15, 16.*  
*For Fees, see pp. 33, 34, 35.*  
*The attendance on all courses of Lectures is registered.*

### BIOLOGY (BOTANY AND ZOOLOGY.)

MR. HILL.

A six months' practical course to meet the requirements of the "Conjoint Board" is held from October to March, and a revision class from May to July.

*Courses of Lectures*, including Practical Work, are held during the Winter and Summer Sessions in preparation for the Preliminary Scientific Examination, Univ. Lond. and for other University Examinations (see pp. 17, 33).

### CHEMISTRY.

DR. LE SUEUR.

A systematic Course of LECTURES on Inorganic, Organic and Physical Chemistry is given during the Winter and Summer Sessions. These lectures are fully illustrated by experiments, and are supplemented by a course of tutorial classes held by Dr. Haas.

Courses of practical instruction in Chemistry as required for the Preliminary Scientific Examination (Univ. Lond.), and for the Examinations of the Conjoint Board, extend over the Winter and Summer Sessions. (See pp. 17, 33.)

*A special course of Practical Instruction* is given in the Laboratory to Candidates for Diplomas in Public Health. (See p. 35.)

Arrangements may be made for additional Practical Work (Elementary and Advanced) in the Chemical Laboratory at fees which may be ascertained from the Medical Secretary.

### PHYSICS.

MR. WATKIN.

Courses of Lectures, fully illustrated by experiment, are given during the Winter and Summer sessions, and are especially adapted to the requirements of the London University Preliminary Scientific Examination and the first Professional Examination of the Conjoint Board.

The lectures are supplemented by Tutorial and Practical Classes.

### ANATOMY.

MR. PARSONS.

A six months' course, consisting of five lectures a week, is given during the Winter Session. As certain portions of the subject are dealt with more fully in alternate years, students are required to attend the course both in their second and third years.

The lectures are illustrated by fresh dissections and preparations.

Classes, conducted partly by examination, partly by demonstration, are held during the latter half of the Winter Session, and deal with those sections of anatomy which cannot be included in the lecture course.

A Course of special demonstrations of Surface Anatomy is given during the Summer Session.

**PRACTICAL.**—During both Winter and Summer Sessions the dissecting room is open for the use of students, and the demonstrators attend daily. A number of stock preparations are displayed in the room, and the others are preserved for use in the tutorial classes.



Tutorial classes are held prior to the January, March and July examinations of the "Conjoint Board," which all candidates are allowed to attend. A verbal test examination is held three weeks prior to the examinations, at which candidates must satisfy the teachers as to their knowledge before obtaining the necessary signatures to their schedules.

*Special classes* are held by the lecturer and demonstrators for the various University Examinations, as well as for the Primary Fellowship of the College of Surgeons in May and November. For the November Examination classes begin in September. No additional fee for these classes is charged to Students paying the Annual Composition Fee.

### COMPARATIVE ANATOMY.

MR. PARSONS.

A course of lectures, especially intended for the primary examination for the Fellowship of the College of Surgeons and for the B.Sc. (Hon.) degree in Anatomy and Morphology of the London University, is given from January to March.

### APPLIED ANATOMY.

DR. BOX.

A course of lectures on Applied Anatomy is given during the second half of the Winter Session. It is illustrated by Lantern Slides and Models, and may be attended by Students in their third, fourth, or fifth years.

### PHYSIOLOGY.

DR. LEATHES.

A systematic course of lectures is given throughout the Winter and Summer Sessions. As certain portions of the subject are dealt with more fully in some years than in others Students are required to attend the course both in the second and third years.

An elementary practical class for third year Students is held in the first half of the Winter Session. An elementary course of Chemical Physiology, also for third year Students, is given in the second half of the Winter Session.

A practical class in Histology is held three mornings a week during the Summer Session, and is attended by second year Students. Each Student is practically instructed in the methods of preparing histological specimens.

Each Student for the purposes of this class must provide himself with a microscope, slides and cover glasses, drawing-book and pencils, box to hold twelve dozen specimens, forceps, scalpel, scissors, section-lifter, mounted needles, and six watch glasses.

A table, cupboard and drawer, chemicals, staining and mounting fluids, &c., are provided for him. A deposit of 5s. is charged for the use of a key and apparatus, and this is repaid at the end of the course if both are returned in proper order.

Tutorial classes in Physiology are held by the Demonstrator prior to the January, April, and July examinations of the "Conjoint Board."

A *special class* in advanced practical Physiology is held twice a week from October to March and consists of two parts. The first half of the course is devoted to the use and study of those instruments and experiments which are fitted to class work. The second half is a course of advanced Chemical Physiology. During this class, demonstrations are given of many experiments which cannot be carried out by the Students themselves. This class is intended for those preparing for University Examinations (Cambridge, London, Oxford), or for the Fellowship of the College of Surgeons,

*Special classes* are held by the Lecturer and Demonstrator for the various University Examinations, as well as for the Primary Fellowship of the College of Surgeons in May and November. For the November Examination classes begin in September. No additional fee for these classes is charged to Students paying the Annual Composition Fee.

## **PHARMACY, PHARMACOLOGY, AND THERAPEUTICS.**

DR. PERKINS, WITH DR. RUSSELL.

Lectures and Demonstrations are given during the Winter Session, the course being specially adapted to the requirements of candidates for the examinations of the Universities of London, Oxford and Cambridge, and the "Conjoint Board."

This course embraces the actions of the various medicinal agents on the healthy body, and on general morbid conditions.

Demonstrations of *Materia Medica* are given in the *Materia Medica* Museum by Mr. Wilson and two assistants.

**PRACTICAL PHARMACY.**—Instruction in Practical Pharmacy and Dispensing (see p. 33) as required by the Universities of London, Oxford, and Cambridge and the "Conjoint Board," is given by the Hospital Pharmaceutist, Mr. Wilson. In addition, special classes are held in Pharmaceutical Chemistry to meet the requirements of the first M.B. of Oxford (Practical Exam. in *Materia Medica* and Pharmacology) and the third M.B. of Cambridge.

## **MIDWIFERY AND DISEASES OF WOMEN.**

DR. TATE.

A systematic course of lectures on Midwifery is delivered by Dr Tate during the Summer Session, embracing the physiology and pathology of pregnancy, labour, and the puerperal state, preceded by an account of the anatomy and development of the female pelvis, and of the placenta and foetal membranes.

A course of Obstetric demonstrations on the model is given by Dr. Fairbairn during the Winter Session.

A course of about twenty Lectures (chiefly Clinical) on the Diseases of Women is delivered by Dr. Tate during the latter half of the Winter Session.

A class is held by the Obstetric tutor for practical instruction in the mechanism and management of labour and the use of instruments. No student is allowed to attend maternity cases until he has attended this class.

Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." (See p. 23.)

## **MEDICINE.**

DR. SHARKEY AND DR. HAWKINS.

A systematic course of lectures on the Principles and Practice of Medicine is given during the Winter Session.

Clinical lectures on Medicine are given once a week throughout the Academic year, by the physicians to the Hospital in rotation. The subject of each Lecture is advertised beforehand in the Hospital and Medical School.

## **PRACTICAL MEDICINE.**

DR. PERKINS, DR. COLMAN, DR. BOX, AND THE  
MEDICAL REGISTRAR.

An elementary course of practical instruction in the means of physical diagnosis is held for about a month prior to each quarterly appointment of out-patient clinical clerks; no student can be appointed until he has

attended this class, or an equivalent course elsewhere. Instruction is given in the principles and method of examination of the circulatory, respiratory, urinary, digestive, and nervous systems.

Tutorial Classes are held prior to the January, April, and July Examinations of the "Conjoint Board." (See p. 23.)

## **SURGERY.**

**MR. MAKINS AND MR. BALLANCE,**

A systematic course of lectures on General and Special Surgery is given three times weekly throughout the Winter Session. The subject, being too extensive for a six months' course, is spread over more than one Winter Session.

Clinical lectures on Surgery are given once a week throughout the Academic year, by the surgeons to the Hospital in rotation. The subject chosen for each lecture is advertised beforehand in the Hospital and Medical School.

*Special classes* are held before each Examination for the Final F.R.C.S. (See p. 35.)

## **PRACTICAL SURGERY.**

**MR. ROBINSON AND MR. WALLACE.**

During the Winter Session a class is held once a week, providing special instruction for students holding Out-patient dresserships. The first half comprises bandaging, the treatment of wounds, the use of certain instruments and splints, and the demonstration of surgical landmarks on the living model.

The second half includes the diagnosis and treatment of fractures and dislocations, application of trusses and tourniquets, minor operations, treatment of hæmorrhage and surgical emergencies. No Student can be appointed a dresser until he has attended the class.

The teachers of practical surgery are assisted by Demonstrators, who supervise the students after each lecture in the various manipulations on the living models provided.

Tutorial classes are held prior to the January, April, and July examinations of the "Conjoint Board." These include general surgery, operative surgery, and surgical anatomy, by Members of the Surgical Staff; and surgical pathology, by Mr. Shattock (see p. 23).

## **OPERATIVE SURGERY.**

Classes are held by Mr. Robinson previous to the January, April, and July examinations of the "Conjoint Board." The operations are performed by the students, subjects being provided at the expense of the school.

*Special classes* are held at convenient times by Mr. Battle and Mr. Wallace, for students preparing for the higher examinations. (See p. 35.)

## **PATHOLOGY AND BACTERIOLOGY.**

**MR. SHATTOCK AND MR. DUDGEON.**

A course of lectures on General Pathology, Diseases of Special Organs, and Bacteriology, illustrated by lantern slides, is given throughout the Winter and Summer Sessions.

A Lecture-Demonstration of macroscopical and microscopical preparations is given every Saturday throughout the Winter and Summer Sessions.

Practical instruction in Bacteriological methods is given by Mr. Shattock during both the Winter and Summer Sessions.

Practical instruction in Clinical Pathology, Morbid Anatomy, and

Bacteriology is given throughout the year in the Hospital Laboratories, and every student is expected to serve a clerkship in these.

Before the various examinations the Demonstrators of Morbid Anatomy and of Clinical Pathology hold TUTORIAL CLASSES.

POST-MORTEM EXAMINATIONS are performed daily at 2 p.m., except Saturdays when they are at 10 a.m. Students are appointed to act as clerks, and make the examinations under the supervision of the pathologists. Short explanations of the conditions met with are given at the time and in addition a further demonstration is held every Saturday at 11.30, dealing with the more important cases. Microscopical sections and cultures illustrative of the morbid conditions are then shown. By this means the Students are enabled to follow the post-mortem work of the Hospital without interfering with their clinical work in the Wards and Out-patient Department.

N.B.—For the Diploma of Public Health the Bacteriological Course is followed by a more detailed study of such Pathogenic organisms as those of Typhoid, Cholera, and Diphtheria; the examination of infected animals; and the Bacterial examination of water, air, and soil.

## FORENSIC MEDICINE AND TOXICOLOGY.

DR. COLMAN.

Demonstrator of Toxicology—Dr. Haas.

A three months' course of lectures is given during the Summer Session by Dr. Colman.

The lectures cover the synopses of the various Examining Boards, and are supplemented in the toxicological section by demonstrations by Dr. Haas.

## MENTAL DISEASES.

DR. PERCY SMITH.

A three months' course of lectures is given during the Summer Session, comprising Symptomatology, Causation, States and Forms of Disease.

1. Mental Defects—Idiocy, Imbecility, etc.
2. Mental disorders—(a) States of Mental Depression, Melancholia, etc.; (b) States of Mental Exaltation, Mania, etc.; (c) States of Stupor; (d) States of Chronic Disorder, and Dementia.
3. Mental disorder in relation to diseases, causes, etc.
  - (a) General paralysis, epilepsy, and other neuroses.
  - (b) Insanities of puberty, adolescence, pregnancy, parturition and lactation; climacteric and senile insanities.
  - (c) Insanities from injury, heat-stroke, fevers, etc.
  - (d) Insanities from alcohol, lead, and other toxic agencies.
  - (e) Insanities from gout, phthisis, and associated bodily diseases.
4. General Pathology of Insanity.

Clinical Instruction is given by visits to Camberwell House on Saturdays at 11 a.m. during the Summer Session, and also in the Out-Patient department at St. Thomas' Hospital, on Tuesdays at 10 throughout the year.

## TROPICAL DISEASES.

DR. SANDWITH.

A course of lectures is given during the Summer Session, commencing the first week in May. The lectures are on Wednesdays at 4.30. The subjects are selected from the following syllabus: Malaria, Mediterranean Fever, Dengue, Cholera. Dysentery, Beri-beri, Plague. Pellagra, Billiarziosis, Anchylostomiasis, Leprosy.

## DISEASES OF THE EYE.

MR. LAWFORD AND MR. FISHER.

A course of about twenty lectures is given during the Winter Session. Occasional demonstrations of cases are also given. A clinical lecture or demonstration of cases is given weekly during the Summer Session.

An elementary class for learning the use of the Ophthalmoscope is held in October, January, and May. Ophthalmoscopic cases are shown once a week during the Winter Session.

Oral classes and demonstrations are held in connection with the Surgical tutorial classes for the examinations of the "Conjoint Board."

*A Special Course* of operations on the dead subject is given by Mr. Fisher.

## PUBLIC HEALTH.

DR. SEATON.

A course of lectures is given during the Summer Session, dealing with:—

Water, Air, Soil, Food, the Dwelling in relation to Health and Disease—Infectious and Epidemic Diseases, the principles of preventive measures—Quarantine, Port Sanitary Administration, Isolation—Hospitals, temporary or permanent—Provisions of the Act for Notification of Diseases—The principles of Disinfection and the mode of action of the chief disinfecting agents—Vaccination—Statistics in relation to public health—Statutes relating to public health—The powers and duties of Sanitary Authorities and their officers—Water Supply, Drainage, Sewerage, the disposal of sewage and excreta by methods adapted to either town or country districts—Trades regulated under the Factory and Public Health Acts.

The lectures may be supplemented by Public Health demonstrations, relating to water supply, systems of sewage disposal and purification, establishment and organization of Isolation Hospitals, house drainage, schools, workhouses and other institutions, Dairy Sanitation, etc. Contagious Diseases (Tuberculosis) Animals' Act.

Degree and Diploma in Public Health.—Dr. Seaton holds special classes for the above, and will be ready to advise gentlemen who are desirous of acquiring the special knowledge of the Sanitary organization of large Towns and Counties, as to the best way of complying with the requirements of the Local Government Acts and of the various examining bodies.

Mr. Shattock and Mr. Dudgeon will give a course of Bacteriology and Microscopy, beginning in April, and Dr. Le Sueur and Mr. Watkin will give two courses of laboratory instruction in Physics and Chemistry, beginning, respectively, in October and January.

St. Thomas's Hospital Medical School is one of the institutions recognised by the Universities of Oxford, Cambridge, and London, and the Royal Colleges of Physicians and Surgeons for the course of laboratory instruction.

## TUTORIAL CLASSES.

All students are specially prepared for examinations in the final subjects of Medicine, Surgery, and Midwifery, by a system of Tutorial Classes. These are held three times a year in each subject, and last for eight weeks before each examination. Each course consists of about twenty-five to fifty classes. The classes are mostly conducted by Members of the Hospital Staff, and their chief object is to prepare students for *viva voce* Examination.

## ADVICE TO STUDENTS ABOUT TO ENTER THE MEDICAL PROFESSION.

**Registration.\***—The commencement of Medical Study cannot be registered at the Office of the General Medical Council until the Student has attained the age of 16 years and has passed a Preliminary Examination in the subjects of General Education as specified in the following list :

(1) English ; (2) Latin ; (3) Arithmetic, Algebra, and Euclid—Books I., II., III. ; (4) Either Greek, or any Modern Language.

**Preliminary Examinations.**—A student who has not passed such an examination is strongly recommended to pass the Matriculation of the University of London, and is strongly advised to take Chemistry in addition to the subjects named in the foregoing list. Changes have recently been made in this examination by which the number of compulsory subjects is reduced and at the same time the range of choice widened. It possesses the great advantage of forming the first step on the road to a medical degree, the importance of which can hardly be over estimated. The regulations may be obtained from the Registrar, University of London, South Kensington, S.W.

For the purpose of registration simply the Professional Preliminary Examination of the College of Preceptors is also recognised. Particulars may be obtained from the Secretary, College of Preceptors, Bloomsbury Square, W.C.

Certificates of Graduation, Matriculation, and the Local Examinations of British and Colonial Universities are accepted by the General Medical Council provided that the above-mentioned subjects be shown to have been included at one and the same time.

A student cannot be admitted to the Final Examinations until he is 21 years of age and has completed five years' study.

To students who commence their medical education in London, two alternative curricula are open : the one leads up to the Diploma of the Conjoint Board, the other to the degrees of the University of London. The courses of study are equal in length, and the arrangement of work practically the same. For the London University course, however, a higher standard is demanded, particularly in the earlier subjects of the curriculum, than for the examinations of the Conjoint Board, and while the general scheme of study in the Medical School at St. Thomas's is adapted for either career certain special classes are provided (see page 17) to meet these greater requirements. The large majority of medical students in London take the Diploma of the Conjoint Board even if they are members of a University as well. In fact it is wise for all to do this as the diploma is a stepping stone to certain higher qualifications.

---

### CURRICULUM FOR THE UNIVERSITY OF LONDON AND FOR THE DIPLOMA OF THE CONJOINT BOARD.

All Students are required to apply to the Medical Secretary for cards of Admission to the Lectures, attendance on which is in all cases registered.

---

\* The Regulations of the General Medical Council with regard to Registration may be obtained from Messrs. Spottiswoode & Co., 54, Gracechurch Street, London, E.C.

**For a Student who enters in October.** (For days and hours of Lectures, &c. see Time Tables, pp. 15 and 16).

### **First Winter Session.**

Biology, Chemistry, Physics, with Practical Work in each subject. Lectures.  
 Part III. (Elementary Biology) of the First Professional Examination of the Conjoint Board in March. Examinations.

### **First Summer Session.**

Biology, Chemistry, Physics, with Practical Work in each subject. Lectures.  
 Preliminary Scientific Examination Part I (Univ. Lond.), in July, or Examinations.  
 Parts I and II (Chemistry and Physics), of the "First Conjoint."

### **Second Winter Session.**

Anatomy, Physiology, Anatomical Demonstrations and Dissections. Lectures  
 Organic Chemistry for Preliminary Scientific Examination, Examinations.  
 Part II.

"Sessional" in December and March (see p. 32).

### **Second Summer Session.**

Histology with Practical Work, Dissections, Organic Chemistry, Lectures.  
 Demonstrations in Practical Pharmacy, Practical Instruction in Examinations.  
 Pharmacy.

"Sessional" (see p. 32). Preliminary Scientific Examination, Part II Examinations.  
 (Organic Chemistry).

NOTE.—Students are eligible to present themselves for the "Second Conjoint" on the completion of twelve months' study of Anatomy and Physiology, subsequent to passing in Biology, Chemistry and Physics. They are strongly advised to take this examination at the earliest date possible, since the Final Examination cannot be undertaken until two years after passing the "Second Conjoint."

### **Third Winter Session.**

Anatomy and Physiology with Demonstrations and Dissections. Lectures.  
 Practical and Chemical Physiology. Pharmacology with Demonstrations. Examinations.

"Sessional" in December and in March (see p. 32).

### **Third Summer Session.**

Practical Surgery, Tutorial Classes in Anatomy and Physiology, Lectures.  
 Dissections. Demonstrations in Pharmacy and Materia Medica. Examinations.

Intermediate Examination, Univ. Lond. Pass Part IV (Pharmacy) of "First Conjoint" if not already passed.

The course of instruction in Practical Medicine must be attended by Candidates for Out-Patient Clinical Clerkships, and the course of Elementary Practical Obstetrics by Candidates for Obstetric Clerkships.

### **Fourth Winter Session.**

Hospital Practice, Medical and Surgical. Clinical Clerkship or Dressership.

**Lectures.** Medicine, Surgery, Pathology, Obstetric Demonstrations, Practical Surgery, Pharmacology.

Clinical Clerkship (if not held during July, August, and September), and Dressership, in the Out-Patient Departments, Post Mortem Clerkships, Clerkship in Pathological Laboratory.

Maternity Cases may be attended by Students who have passed the Intermediate Examination, or the "Second Conjoint," and who have attended the Lectures on Midwifery and a course of Practical Obstetrics. N.B.—Clerks in the Post-Mortem Room are not allowed to attend Maternity Cases.

#### **Fourth Summer Session.**

Hospital Practice, Medical and Surgical, with Clerkship or Dressership.

**Lectures.** Pathology (continued) including Practical instruction in Bacteriology, Forensic Medicine, Midwifery, and such of the subjects of the Fifth Summer Session as time and circumstances permit.

#### **Fifth Winter Session.**

Hospital Practice, Medical, Surgical, the Special Departments, and Post-mortem Examinations. Clerkship or Dressership in special Departments. Instruction in Vaccination (Fee, one guinea and a half, p. 35).

**Lectures.** Pathology (if not taken in fourth winter); Medicine, Surgery, Obstetric Demonstrations; Diseases of Women: Diseases of the Eye. Clinical Lectures on Medicine and Surgery. Applied Anatomy.

**Examinations.** School Examinations in Medicine, Surgery, Midwifery, Pathology, Pharmacology, Forensic Medicine (including Insanity) and Public Health (see p. 32).

#### **Fifth Summer Session.**

**Lectures.** Hospital Practice, Medical and Surgical, and Special Departments. Midwifery, Mental Disease, Tropical Diseases, Public Health, Diseases of the Eye, Clinical Medicine, Clinical Surgery.

Tutorial Classes in Medicine, in Surgery (including operations upon the Dead Subject), and in Midwifery.

Advanced Students are strongly advised to avail themselves of the opportunities afforded for Clinical Study of Fevers at the Hospitals of the Metropolitan Asylums Board, and of Mental Diseases at Bethlem Hospital in their fifth year.

**Examinations.** Candidates for part III. of the Final Examination for the Diploma of the "Conjoint Board" are required to produce a certificate of attendance on not less than twenty labours. Students who have passed the "Second Conjoint," and have attended Lectures on Midwifery, and a Course of Elementary Practical Obstetrics, may enter their names for the Rota of Obstetric Clerks, but cannot do so whilst holding a Post-Mortem Clerkship.

No Student is admitted to part I. or II. of the Third Examination of the "Conjoint Board" until at least two years after passing the Second Examination, and five Winter and five Summer Sessions from the date of passing the Preliminary Examination.

No Candidate will be admitted to the M.B., B.S. Examination, Univ. Lond., unless he has completed the Intermediate Examination two years previously, nor until the course of Study prescribed for the fourth and fifth years has been completed.



## UNIVERSITY OF LONDON.

As in the case of the curriculum of the Conjoint Board a year must be devoted to the Preliminary Scientific Examination Part I, which includes Inorganic Chemistry, Physics, Botany and Zoology, and must be passed before proceeding to the study of Anatomy and Physiology. (For special courses see p. 17). An Examination in Organic Chemistry (Prel. Sci. Part II), must be passed subsequent to the Preliminary Scientific (Part I), but not later than one year previous to entry for the Intermediate Examination. Two years after passing the Preliminary Scientific Examination Part I, a student can present himself for the Intermediate Examination in Medicine. This includes Anatomy and Physiology, Pharmacology and Materia Medica (for special courses see p. 17). The Final M.B., B.S. Examination can be taken two years after the Intermediate Examination.

## UNIVERSITIES OF OXFORD AND CAMBRIDGE.

As a rule the Students from the older Universities join the Medical School at the commencement of their fourth year, that is, after they have passed an Examination corresponding to the Second Professional of the Conjoint Board, or the Intermediate Examination in Medicine of the London University. At the end of the fourth year such Students have to present themselves for an Examination in General Pathology and Pharmacology, for which the course of study in the Medical School is specially adapted (see pp. 20, 21). Preparation for this Examination is carried on concurrently with clinical work in the Hospital Ward or Out-patient Room. The Final Examination for the M.B. degree corresponds in all essentials to that for the London University degree, but Cambridge Students have in addition to write a Thesis or Essay on some medical subject.

---

Students intending to prepare for **University Degrees and other higher Examinations** should apply to the Sub-Dean for any further information relating thereto. (For Special Courses for these Examinations see p. 17. For University Tutors see p. 8.)

During the fourth and fifth years, the greater part of the time can, and should, be given to the practical study of disease in the Wards, Out-Patient Departments, and Post-Mortem Room, but Students are reminded that such courses of lectures as relate to Final Examinations may be with advantage re-attended.

Students when qualified should use every effort to obtain one or more of the senior appointments open to them, especially those of House Physician, House Surgeon, and Obstetric House Physician. These and other appointments, of which details are given at p. 31, afford opportunities for obtaining practical professional knowledge which cannot be estimated too highly. No payment is required for any of them.

All Students are required by the Governors to conform to the Regulations of the Hospital and Medical School, and the School Committee is empowered, with the approval of the Treasurer to suspend or remove a Student at any time for adequate reason.

**N.B.—The Regulations for the Sessional Examinations and Prizes will be found on p. 32.**

## SCHOLARSHIPS, PRIZES, APPOINTMENTS, & HONORARY DISTINCTIONS.

### ENTRANCE SCHOLARSHIPS.

#### OPEN SCHOLARSHIPS IN NATURAL SCIENCE.\*

Two Scholarships, of the value of £150 and £60 respectively, are awarded annually, after an examination in Physics, Chemistry, and Biology.

These Scholarships are open to all Students not exceeding 24 years of age who have passed a recognised Preliminary Examination in Arts, and have not received instruction in Anatomy or Physiology, without any condition as to their becoming Students of the Hospital, except in the case of successful Candidates, who must enter at once for the remainder of the curriculum. The Examination will be conducted by means of written papers and practical work, and will be held in the week preceding that in which the 1st October falls. The standard will be that of the Preliminary Scientific Examination for Honours of the University of London. Competitors are required to send in their names and Certificate of Birth and of Preliminary Examination to the Medical Secretary not later than September 15th.

#### UNIVERSITY SCHOLARSHIP.\*

A Scholarship of the value of £50 will be offered for competition in the last week of September after an examination in any two of the following subjects: Anatomy, Physiology, Chemistry. It is open to Students who have completed their examinations in Anatomy, and Physiology, for a Medical Degree in any of the Universities of the United Kingdom or the Colonies, and have not entered as Students in any London Medical School.

The Examination is held in the week preceding that on which the 1st October falls; the Examination in Anatomy and Physiology being held on the first two days of the week.

### PRIZES.

#### THE WILLIAM TITE SCHOLARSHIP.

This Scholarship, founded by the late Sir W. TITE, C.B., M.P., F.R.S., of the value of about £25 is awarded each year to the Student placed highest in the 1st Class List in the examinations at the end of the second Winter Session. Preference, in case of equality between Students, is to be given to the son of a medical man, and more particularly of one who has been educated at St. Thomas's Hospital or is in Practice in Bath.

#### THE MUSGROVE SCHOLARSHIP.

This Scholarship, founded by Sir JOHN MUSGROVE, Bart., the late President of the Hospital, of the value of about £35 is awarded biennially to the Student who shall take the highest place in the 1st Class List in the examinations at the end of the third Winter Session. It is tenable for two years, provided the holder has worked during his fourth year to the satisfaction of the Medical School Committee.

#### THE PEACOCK SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. THOMAS BEVILL PEACOCK, for many years Physician, and at the time of his death Consulting Physician to St. Thomas's Hospital, is of the same value as the Musgrove Scholarship; is awarded and held upon the same terms; and is given every second year in alternation with that Scholarship.

#### THE LOUIS JENNER RESEARCH SCHOLARSHIP.

This Scholarship was founded by the DOWAGER LADY JENNER in memory of her son, Dr. Louis Leopold Jenner. It is of the annual value of £60 and is instituted for the encouragement of original research into the cause, nature and process of disease. The Scholarship is tenable for one year with

\*Examination papers for the last examination held may be obtained from the Medical Secretary.

the possibility of extension of tenure for a second year subject to approval of the Medical and Surgical Officers and Lecturers. The Scholar must be qualified and a Student of the Hospital. The tenure of the Scholarship dates from May 1st of each year and the investigation must be carried on in or in connection with the Louis Jenner Laboratory of Clinical Pathology.

#### THE BEANEY SCHOLARSHIP.

This Scholarship, founded by the will of the late Dr. BEANEY, of the value of £50, is awarded biennially, after an examination in Surgery and Surgical Pathology, to a student who shall have completed his fifth but not his seventh year. The examination is held during the Summer Session.

#### THE SALTERS' COMPANY RESEARCH FELLOWSHIP.

This Fellowship of the annual value of £100 has been established and endowed by the Salters' Company, with a view to the promotion of research in Pharmacology. The Fellowship is awarded to a properly qualified person by the Company on the nomination of the Treasurer of St. Thomas's Hospital and a Committee of Selection. It may be held for a term of three years, the Fellow carrying on his researches at St. Thomas's Hospital and giving annual evidence of the performance of satisfactory work to the Committee of Selection. The Fellow is required to devote his whole time to research and to hold no other office or appointment except by special permission of the Salters' Company, granted on the strong recommendation of the Committee of Selection.

The following Scholarships, Prizes, and Medals, will be offered for Competition during the year 1905-1906:—

**TWO OPEN SCHOLARSHIPS IN PRELIMINARY SCIENCE** of the value of £150 and £60 respectively, at the commencement of the 2nd year. See page 28.

**THE UNIVERSITY SCHOLARSHIP** of the value of £50 to new Students entering at the commencement of the 4th year. See page 28.

#### AT THE END OF SECOND YEAR.

<i>Winter.</i>	1st. ...	The William Tite Scholarship.	See p. 28	£25.
	2nd. ...	College Prize	... ..	£20.
	3rd. ...	Ditto	... ..	£10.
<i>Summer.</i>	1st. ...	College Prize	... ..	£15.
	2nd. ...	Ditto	... ..	£10.

#### THIRD YEAR.

<i>Winter.</i>	1st. ...	The Peacock Scholarship.	See p. 28	£35.
	2nd. ...	College Prize	... ..	£20.
	3rd. ...	Ditto	... ..	£10.

#### FOURTH YEAR.

Second Tenure of the Musgrove Scholarships. See p. 28 ... £35.

#### FIFTH YEAR.

*Winter.* An Examination will be held in the second half of the Fifth Winter Session, for which a Prize of £10 will be given in each subject.

Students of each year are classed according to their respective merits in the examinations, and those in the *first* class in each year receive Certificates of Honour, and a preference in the selection for Hospital Appointments.

In addition there are awarded—

The MEAD MEDAL, founded by Mr. and Mrs. NEWMAN SMITH (in honour of Richard Mead, Physician 1703—1714) is awarded annually to a Fifth Year's Student, in respect of a Special Practical Examination in Medicine, Pathology and Hygiene.

The WAINWRIGHT PRIZE, £10, founded by the present Treasurer, is awarded annually to a University Student under certain conditions after an Examination in Medicine, Pathology and Hygiene.

The SEYMOUR GRAVES TOLLER PRIZE, founded by Dr. E. TOLLER (in memory of his son, S. G. Toller, elected Assistant Physician, 1897), is awarded annually after an examination in Medicine, Pathology, and Hygiene.

The CHESELDEN MEDAL, founded by the late GEORGE VAUGHAN, Esq. (in honour of William Cheselden, elected Assistant Surgeon, 1719), is annually awarded to the Fifth Year's Student who most distinguishes himself in respect of a Special Practical Examination in Surgery and Surgical Anatomy.

The SOLLY MEDAL (in memory of the late Samuel Solly, elected Assistant Surgeon, 1841), together with a Prize in Money, is awarded biennially. Those Students are eligible to compete who are of from four to seven years' standing. The award is made for the best series of Reports of Surgical cases coming under the Student's personal observation in the Wards, not, however, to exceed ten in number. Reports must be sent in not later than March 21st.

The BRISTOWE MEDAL (in memory of the late Dr. J. S. Bristowe, F.R.S., Assistant Physician and Physician 1854—1892), is awarded annually in respect of a special Practical Examination in Pathology and Morbid Anatomy. The examination is held in the first half of the Winter session.

The HADDEN PRIZE (in memory of the late W. B. HADDEN, Assistant Physician, 1885—1893), is awarded at the Examination at the end of the fifth Winter session as the prize for Pathology.

The SUTTON SAMS MEMORIAL PRIZE, is awarded biennially for the best series of Reports of Cases in Obstetric Medicine, including Midwifery and the Diseases of Women. Reports must be sent in not later than June 30th.

The GRAINGER TESTIMONIAL PRIZE, of the value of Fifteen Pounds, is awarded annually for work in Anatomy and Physiology. The conditions of competition for this Prize can be learnt from the Sub-Dean.

The TREASURER'S GOLD MEDAL for General Proficiency and Good Conduct, is awarded at the end of the 5th Winter Session to the Student who has passed through his pupilage in St. Thomas's Hospital in the most meritorious manner (printed regulations are posted in the Library).

Intending Competitors should apply to the Sub-Dean for detailed regulations.

### APPOINTMENTS.\*

A RESIDENT ASSISTANT PHYSICIAN and a RESIDENT ASSISTANT SURGEON, at a salary of £100 per annum each, are from time to time appointed. The appointments are annual, but the tenure of office may be renewed for a term not exceeding one year.

SENIOR AND JUNIOR RESIDENT CASUALTY OFFICERS are appointed every three months, salary at the rate of £100 per annum.

TWO HOSPITAL REGISTRARS, at an annual Salary of £100 each, are appointed in each year. They are eligible for annual re-appointment, but may not hold office for more than two years. Preference will be given to Students of the Hospital who have specially distinguished themselves and have completed their studies in the School.

AN OBSTETRIC TUTOR AND REGISTRAR is appointed each year, at an annual salary of £50. He is eligible for annual re-appointment, but may not hold office for more than three years consecutively. The holder of the office takes part in the tutorial instruction of students, under the direction of the Obstetric Physicians.

A DIRECTOR OF THE HOSPITAL LABORATORIES at a salary of £400 per annum.

AN ASSISTANT IN THE LOUIS JENNER CLINICAL LABORATORY, at a salary of £100 per annum.

AN ASSISTANT PATHOLOGIST at a salary of £125 per annum. The last two are subject to annual re-election.

---

\* All these Appointments are open to Students without extra payment.

**House Appointments, open to Students who have obtained their diplomas.** (*The duties of these offices commence on the first Tuesday in March, June, September, and December.*)

Four RESIDENT HOUSE PHYSICIANS, FOUR HOUSE PHYSICIANS to out-patients, Four RESIDENT HOUSE SURGEONS, and Four HOUSE SURGEONS to out-patients are selected every three months. The House Physicians and House Surgeons to out-patients are non-resident, but the other Officers are provided with Rooms and Commons in the Hospital, free of expense, and hold office for six months, if recommended for re-election.

A SENIOR and a JUNIOR OBSTETRIC HOUSE PHYSICIAN are selected every three months. The former is provided with Rooms and Commons in the Hospital, free of expense. The latter is provided with Commons, and must live near the Hospital.

Two OPHTHALMIC HOUSE SURGEONS, Senior and Junior, are appointed every six months; the Senior is provided with Rooms and Commons in the Hospital, free of expense; the Junior receives a Salary at the rate of £50 per annum. He must live near the Hospital.

CLINICAL ASSISTANTS in the Departments for Diseases of the Throat, Skin and Ear, and in the Electrical, X Ray, and Physical Exercise Departments, are appointed every three months.

In the Special Departments preference is given to those who have worked in a satisfactory manner therein as Clinical Clerks and Dressers.

#### **Appointments for Students before Qualification.**

CLINICAL CLERKS and DRESSERS to In-patients are selected to the number of at least 100 each year, from amongst the most eligible pupils. The DRESSER on Accident Duty is provided with a Room and Commons in the Hospital. CLINICAL CLERKS and DRESSERS for the Out-patients are also appointed, to the number of at least 80 to 100 each year; applicants are required to have passed the 2nd examination of the Conjoint Board, or an equivalent examination, and to have attended a course of instruction in Elementary Clinical Medicine (p. 20). (*The Duties commence on the first Tuesday in January, April, July, and October.*) CLINICAL CLERKS TO THE ANÆSTHETISTS are also appointed to hold office for one month.

OBSTETRIC CLERKS are appointed, in rotation, from a list of Students who have entered their names for the purpose, have attended Lectures on Midwifery and a course of Elementary Practical Obstetrics, and have passed the "Second Conjoint," or an equivalent Examination. Each Clerk holds office for three weeks, and Special Certificates are awarded to those Gentlemen who have satisfactorily attended Sixty Maternity cases. An allowance is made towards the cost of board and lodging.

Students are appointed to act as ASSISTANTS in the CLINICAL LABORATORY, the PATHOLOGICAL LABORATORY and the POST-MORTEM ROOM.

ASSISTANTS TO THE TEACHERS OF PRACTICAL AND MANIPULATIVE SURGERY are appointed for the Winter Session.

ASSISTANTS TO THE LECTURER ON MATERIA MEDICA are appointed for the Summer Session.

ASSISTANTS IN THE CHEMICAL DEPARTMENT are selected from those who have passed the PRELIMINARY SCIENTIFIC EXAMINATION, UNIV. LOND. or who are similarly qualified.

ASSISTANTS IN THE PHYSIOLOGICAL LABORATORY are selected from Students who have completed their Second Winter Session.

ANATOMICAL REGISTRARS and PROSECTORS are appointed in the early part of the Winter Session, also ASSISTANTS TO THE LECTURER ON ELEMENTARY BIOLOGY.

## REGULATIONS FOR THE EXAMINATION AND CLASSIFICATION OF THE STUDENTS AT THE MEDICAL SCHOOL.

1. In accordance with the Regulations of the Qualifying Bodies, Students must attend the Class Examinations in the subjects for which they have to be certified, and show by their answers to the questions that they have paid proper attention to the Lectures, otherwise the signature to their Schedules may be withheld.

2. There shall be held at least two Examinations in the 2nd and 3rd Winter and one in the 2nd Summer Session in each subject on which attendance is required during that Session, and the marks obtained in these Examinations shall be the basis for the Classification of Students and the Award of Prizes for each Session respectively. Provided that any extra Examination in the course of the Session, in any subject, be not allowed to interfere with the ordinary Lectures in other subjects.

3. The number of marks allotted to each subject in the following Schedule is not to be exceeded in case the number of Examinations held during the Session be more than two, but must be distributed amongst the several Examinations.

4. Students must obtain at least one-third of the total number of marks in each subject, and not less than two-thirds of the total number allotted to all the subjects collectively, to be placed in the 1st Class.

Those who have obtained one-third of the total number of marks allotted to all the subjects collectively are placed in the 2nd Class.

The names of those who do not obtain either a 1st or 2nd Class position are not published, but a General List showing the exact position of each Student at every Examination is kept by the Secretary, from whom any Student can learn his own position, but no Lecturer shall make known to Students the number of marks obtained by any Student in any subject.

5. The Prizes shall be awarded to the Students holding the 1st, 2nd, and 3rd positions in the 1st Class of each Winter Session, and to those holding the 1st and 2nd positions of the 1st Class in the second Summer Session.

6. In awarding the TREASURER'S Medal the number of marks obtained at the Seasonal Examinations and in the MEAD and CHESELDEN Examinations shall be counted, provided that, as regards the Examination for the Medals, two-thirds of the maximum marks be obtained, but those obtained in the Entrance Scholarship Competition shall not be included.

7. The Authorities reserve the right of withholding any prize, if no competitor of sufficient merit presents himself.

8. Attendance and satisfactory performance at the Fifth Year's Examination is compulsory upon all Students who desire to hold a House Appointment, or an appointment as Clinical Assistant in a Special Department.

### 2nd YEAR'S SUBJECTS.

WINTER ...	Anatomy ...	500
	Practical Anatomy ...	300
	Physiology ...	300
	Total ...	1100
SUMMER ...	Practical Pharmacy ...	200
	Histology ...	300
	Total ...	500

### 3rd YEAR'S SUBJECTS.

WINTER ...	Anatomy ...	500
	Practical Anatomy ...	300
	Physiology ...	400
	Practical Physiology ...	400
	Total ...	1600

### 5th YEAR'S SUBJECTS.

Medicine.  
Surgery (including Ophthalmology).  
Midwifery and Diseases of Women.  
Pathology.

Pharmacology and Therapeutics.  
Forensic Medicine (including Insanity)  
Public Health.

Every Student must take up at least three subjects, one of which must be either Medicine or Surgery.

## FEES.

### I. COMPOSITION FEES.

#### A. Preliminary Science Students.

Composition Fee:—16 guineas for the first twelve months or less period.  
8 guineas for each subsequent six months or less period.

This Fee is due from Students taking the Course for the Preliminary Scientific (M.B.) London, and corresponding examinations. In the event of such examination being passed before entry as a Full Student, the sum of 16 guineas already paid to the School will be regarded as part of the Entrance Fee (B).

#### B. Students who have passed the Preliminary Scientific Examination or corresponding examinations.

Entrance Fee ... ..	20 guineas.
Annual Composition Fee ... ..	30 guineas.

#### C. Students who have passed the Intermediate M.B. London or corresponding examinations.

Entrance Fee ... ..	10 guineas.
Annual Composition Fee ... ..	30 guineas.

#### REGULATIONS REGARDING COMPOSITION FEES.

1. The ENTRANCE FEE is due from every student on the day of his admission to the School, with the exception of Preliminary Science Students (A).

2. The ANNUAL COMPOSITION FEE is due in advance on the first day of the term in which the student enters, and on the corresponding day of each successive year, until he has obtained either a Medical Degree of a British University, the diploma of the Conjoint Board in England, or such other registrable qualification as may be approved from time to time by the School authorities.

3. A student who obtains one of the above qualifications within six months of the date on which his last annual composition fee became due, will be allowed a rebate of 15 guineas.

4. The payment of the entrance fee and annual composition fee entitles a Student, during the twelve months following the date on which each annual fee becomes due, to attend all lectures, demonstrations and other instruction provided by the School for students of his standing (with the exception of such courses as may from time to time be specially excluded); to compete for prizes, and, if selected, to hold appointments in the Hospital.

The regular course includes the Special Classes to prepare Students for the Intermediate M.B. and Primary F.R.C.S. Examinations.

5. The course of study pursued by a student paying annual composition fees must be continuous, unless the authorities of the School in particular cases, on the ground of illness, or other cause which may appear to them sufficient, shall otherwise determine.

6. A student who has paid an entrance fee with two or more annual composition fees, who has worked to the satisfaction of the Medical School Committee, and who has obtained one of the above mentioned qualifications, may hold resident and other appointments without further payment, and becomes a Perpetual Student.

An extra charge towards the cost of materials and apparatus is made to Students attending the following Practical Classes:—

Advanced Practical Physiology, Practical Chemistry, Practical Pharmacy;  
three guineas.

Elementary Practical Physiology: two guineas.

Practical Physics, Practical Biology, Microscopic Pathology, Practical Bacteriology, Practical Toxicology: one guinea.

Students pay for the "parts" they dissect at rates which may be ascertained in the Library.

Students must provide themselves with Microscopes and Dissecting Instruments.

## II. FEES FOR SEPARATE COURSES.

### HOSPITAL PRACTICE.

The following are the fees payable by Students who desire to attend the Practice of the Hospital, including Clinical Lectures and Post-mortem Inspections, but excluding Systematic Courses of Lectures and Class Teaching. The payment of these fees renders the Student eligible for Hospital appointments:—

For three months, Medical <i>or</i> Surgical Practice	...	15 guineas.
Both together...	...	20 guineas.
Six months' Medical <i>or</i> Surgical Practice	...	20 guineas.
Both together...	...	27 guineas.
One year Medical <i>or</i> Surgical Practice	...	27 guineas.
Both together...	...	40 guineas.

### LECTURES, DEMONSTRATIONS AND CLASSES.

Single Courses of Lectures, Demonstrations and Classes may be attended on the following terms:—

- (i.) By payment of 16 guineas for each course—  
Preliminary Science Course (Chemistry, Physics and Biology).
- (ii.) By payment of 10 guineas for each course—  
Biology; Anatomy; Practical Anatomy; Physiology; Practical Physiology; Advanced Practical Physiology (including materials); Medicine; Surgery; Twelve months' Post-mortem Inspections and Demonstrations.
- (iii.) By payment of 5 guineas for each course—  
Biology (Conjoint Board); Chemistry; Practical Chemistry; Physics; Practical Physics; Materia Medica (Pharmacology and Therapeutics); Forensic Medicine; Midwifery; Operative Surgery (including the special fee for material); Pathology with Morbid Histology; Bacteriology; Practical Medicine; Practical Obstetrics; Practical Surgery; Ophthalmic Surgery; Mental Diseases; Public Health; Anæsthetics; and the Revision Classes in the various subjects.

NOTE.—The fees paid by a student who enters for classes in any one or more of the subjects for the Preliminary Science Course will, provided that he passes the examination before entering as a full student, be regarded as part payment of the Entrance Fee of twenty guineas.

The same regulation applies to a University or other student entering for one series of classes in Anatomy, Physiology, and Pharmacology, provided that he passes the examination in these subjects previously to entering as a Fourth Year Student.

### POST GRADUATE INSTRUCTION.

The following General and Special Hospitals in London have combined to make all their clinical advantages available to qualified medical men.

#### General Hospitals.

Charing Cross,  
Guy's,  
King's College,

Middlesex,  
St. George's,  
St. Mary's,

St. Thomas's,  
University College,  
Westminster.



### Special Hospitals.

The Brompton Hospital for Diseases of the Chest,  
The Great Ormond Street Hospital for Sick Children,  
The London School of Tropical Medicine,  
The Queen Square Hospital for the Paralysed and Epileptic, and  
The Royal London Ophthalmic Hospital (Moorfields).

Cards are issued at the following rates :—For three months, 10 guineas ; for six months, 15 guineas ; and for twelve months, 24 guineas.

These cards entitle the holder to attend the Hospital Practice (*i.e.*, wards, out-patient rooms, operating theatres, clinical lectures, and post graduate courses) at any of the above-mentioned institutions. The cards do not entitle the holder to certificates of attendance for the purpose of any examination.

All particulars may be obtained at the Central Office, West Wing, Examination Hall, Victoria Embankment, W.C. Letters should be addressed to the Hon. Sec., London Post-Graduate Association.

### III. FEES FOR COURSES NOT INCLUDED IN THE COMPOSITION FEE.

Primary F.R.C.S. (for Candidates who are qualified)	...	10 guineas.
Final F.R.C.S.	... ..	10 guineas.
"    External Students	... ..	15 guineas.
Advanced Operative Surgery (including material)	... ..	5 guineas.
Vaccination	... ..	1½ guineas.
Attendance at a recognised Fever Hospital	... ..	3 guineas.
Attendance at a recognised Lunatic Asylum	.. ...	3 guineas
Public Health—Six months' Laboratory Instruction for the Diploma	... ..	20 guineas.

### THE ST. THOMAS'S HOSPITAL AMALGAMATED CLUBS.

The several Students' Clubs were amalgamated in July, 1888, and are maintained by the subscriptions of the members, and by a yearly grant from the Medical and Surgical Officers and Lecturers.

The Amalgamated Clubs comprise the Students' Club, the Medical and Physical Society, the St. Thomas's Hospital Gazette, and the following Clubs :—Athletic, Chess, Cricket, Cross Country, Football (Rugby and Association), Lawn Tennis, Rifle, Rowing, and Swimming. The Council of the Amalgamated Clubs are in possession of a Cricket, Football, and Lawn Tennis Ground, of more than nine acres in extent, provided with a commodious pavilion. It is situated within five minutes walk of the L. & S. W. Railway Station at Chiswick, and can be reached within forty minutes from the Hospital. Cheap return tickets (7d., 3rd class) can be obtained.

The Annual Subscription to the Amalgamated Clubs is £3 3s. After the payment of five consecutive subscriptions the Student becomes a Life Member, provided he has obtained a registrable qualification.

## ST. THOMAS'S HOSPITAL MEDICAL AND PHYSICAL SOCIETY.

*President.*—MR. C. S. WALLACE.  
*Hon. Treasurer.*—MR. F. G. PARSONS.  
*Hon. Secretaries.*

MR. H. R. UNWIN. | MR. P. T. HARPER.

This Society was founded in the early part of the last century by students of the Hospital, and has for its object the reading and discussion of papers on Medicine, Surgery, and subjects of general interest, the narration of cases, and the exhibition of specimens of Physiological and Pathological interest. The Meetings are held in the Students' Club on alternate Thursdays at 8.30 p.m., and terminate not later than 10 p.m.

Further information can be obtained of the Hon. Secretaries.

## ST. THOMAS'S HOSPITAL GAZETTE.

The Gazette was founded in 1891, and since then has appeared monthly during the Winter and Summer Sessions. It records the current events of the Hospital and School, including the various sections of the Amalgamated Clubs, and reports the papers and proceedings of the Medical and Physical Society. Articles are contributed by Members of the Staff, and by past and present Students, dealing with new methods of treatment and technique, as seen in the practice of the Hospital, and with medical work and life at home, abroad and in the Services. Photographs and illustrations are frequently inserted. In this way the Gazette endeavours to be a common interest to all Members, past and present, of the Medical School.

The GAZETTE is supplied without further payment to those who subscribe annually to the Amalgamated Clubs and, up to the completion of their fifth year, to those who have paid the Composition for life membership. Subsequently it may be obtained by an annual subscription of 5s., or by a Composition at the rate of 1 guinea for 5 years, or 3 guineas for life.

## ST. THOMAS'S HOSPITAL REPORTS.

VOL. XXXIV., NEW SERIES,

EDITED BY

H. G. TURNEY, M.A., M.D. Oxon, and  
 W. H. BATTLE, F.R.C.S.

*Will be Published in due Course.*

The Volume will contain contributions from Members of the Staff and others with the Statistical Reports of the Hospital, by the Medical, Surgical and Obstetrical Registrars, to December 31st, 1905. A General Index to Vols. I. to XXV. appeared in Vol. XXVI.

The New Series commenced in 1870, and complete Sets may still be had.

Intending Subscribers are requested to communicate with MR. G. Q. ROBERTS, the Secretary of the Medical School, at the Hospital, to whom P.O. Orders on the Westminster Bridge Office are to be made payable.

*PRICE OF THE VOLUME (including Postage or delivery) :—*

To Subscribers in Great Britain and Countries within the Postal Union	...	6s. 0d.
To Non-Subscribers	do. do. do.	... 8s. 6d.

# Distribution of Prizes for the Past Sessions.

## SUMMER SESSION, 1905.

### SECOND YEAR'S STUDENTS.

W. B. JOHNSON	...	...	...	...	...	{ College Prize, £15, and Certificate of Honour.
---------------	-----	-----	-----	-----	-----	---

## WINTER SESSION, 1905-1906.

### UNIVERSITY SCHOLARSHIP.

G. R. GIRDLESTONE	...	...	...	...	...	{ Scholarship, £50, and Certificate of Honour.
-------------------	-----	-----	-----	-----	-----	---

### SECOND YEAR'S STUDENTS.

T. E. A. STOWELL	...	...	...	...	...	{ The Wm. Tite Scholarship, £25, and Certificate of Honour.
W. L. PINK	...	...	...	...	...	{ College Prize, £20, and Certificate of Honour.
R. C. MAYBURY	...	...	...	...	...	{ College Prize, £10. and Certificate of Honour.

### THIRD YEAR'S STUDENTS.

W. B. JOHNSON	...	...	...	...	...	{ The Peacock Scholarship, £35, and Certificate of Honour.
E. F. BALLARD	...	...	...	...	...	{ College Prize, £20, and Certificate of Honour.

### FOURTH YEAR'S STUDENTS.

R. W. RIX...	...	...	...	...	...	{ Second tenure of Musgrove Scholarship, and Certificate of Honour.
--------------	-----	-----	-----	-----	-----	---

### FIFTH YEAR'S STUDENTS.

N. R. CUNNINGHAM	...	Senior	...	College Prize, £10 (Medicine).
H. J. NIGHTINGALE	...	Junior	...	" " " "
C. M. PAGE	...	Senior	...	College Prize, £10 (Surgery).
H. J. NIGHTINGALE	...	Junior	...	" " " "
H. B. WHITEHOUSE	...	Senior	...	College Prize, £10 (Midwifery).
A. C. F. TURNER	...	Junior	...	" " " "
H. A. PHILPOT	...	Senior	...	Hadden Prize, £10 (Pathology).
A. C. F. TURNER	...	Junior	...	" " " "
I. C. MACLEAN	...	Senior	...	} aq. College Prize, £5 (Pharmacology).
W. O. SANKEY	...	"	...	
A. C. F. TURNER	...	Junior	...	" " " £10 "
C. M. PAGE	...	Senior	...	} aq. College Prize, £5 (Forensic Medi- cine & Insanity).
H. B. WHITEHOUSE	...	"	...	
A. C. F. TURNER	...	Junior	...	} aq. College Prize, £5 "
W. H. R. SUTTON	...	"	...	
H. GRANGER	...	Senior	...	} aq. College Prize, £5 (Public Health).
C. M. PAGE	...	"	...	
H. G. BENNETT	...	Junior	...	" " £10 "

**PRACTICAL MEDICINE.**

H. J. NIGHTINGALE	...	...	...	...	The Mead Medal.
H. C. SQUIRES	...	...	...	...	The Wainwright Prize.
H. J. NIGHTINGALE	...	...	...	...	The Seymour Graves Toller Prize.

**SURGERY AND SURGICAL ANATOMY.**

C. M. PAGE	...	...	...	...	The Cheselden Medal.
------------	-----	-----	-----	-----	----------------------

**BEANEY SCHOLARSHIP IN SURGERY, £50.**

G. R. FOOTNER	...	...	...	...	} Divide Scholarship.
L. E. C. NORBURY	...	...	...	...	

**PATHOLOGY AND MORBID ANATOMY.**

R. C. JEWESBURY	...	...	...	...	The Bristowe Medal.
-----------------	-----	-----	-----	-----	---------------------

**FOR GENERAL PROFICIENCY AND GOOD CONDUCT.**

H. J. NIGHTINGALE	...	...	...	...	The Treasurer's Gold Medal.
-------------------	-----	-----	-----	-----	-----------------------------

**CERTIFICATES OF HONOUR 1905-1906.****RESIDENT HOUSE PHYSICIANS.**

H. R. DEAN	W. O. MEEK
A. C. INMAN	C. ST. A. COLES
G. J. LANGLEY	F. M. BULLEY
C. L. MORGAN	R. C. JEWESBURY

**HOUSE PHYSICIANS TO OUT PATIENTS**

G. J. LANGLEY	R. C. JEWESBURY
C. L. MORGAN	M. A. CASSIDY
W. O. MEEK	H. S. SINGTON
C. ST. A. COLES	H. C. SQUIRES
F. M. BULLEY	A. N. DICKSON

**RESIDENT HOUSE SURGEONS.**

L. E. C. NORBURY	H. T. GRAY
D. K. COUTTS	A. W. HOOKER
J. H. BLETSOE	J. H. DREW
R. J. C. THOMPSON	H. FALK

**HOUSE SURGEONS TO OUT PATIENTS.**

H. T. GRAY	R. J. H. COX
A. W. HOOKER	F. S. HEWETT
J. H. DREW	A. B. HOWITT
H. FALK	W. G. HOWARTH

**OBSTETRIC HOUSE PHYSICIANS.**

<i>Senior</i> —N. C. CARVER	<i>Junior</i> —E. E. MOSSOP
E. C. MOSSOP	J. M. WYATT
J. M. WYATT	R. E. WHITTING
R. E. WHITTING	S. R. GIBBS

**OPHTHALMIC HOUSE SURGEONS.**

F. R. E. WRIGHT	C. R. B. EYRE	H. E. GOTELEE
-----------------	---------------	---------------

**CLINICAL ASSISTANTS IN THE SPECIAL DEPARTMENTS.**

Throat	Skin	Ear
R. J. H. COX	A. C. BIRT	H. S. SINGTON
S. G. MACDONALD	W. C. A. WARD	F. D. ATKINS
		A. L. LOUGHBOROUGH

**CERTIFICATES OF PROFICIENCY, 1905—1906.****PROSECTORS.**

M. C. IRVINE  
W. B. JOHNSON

W. WEIR  
E. W. WITNEY

**ASSISTANTS IN THE BIOLOGICAL LABORATORY.**

J. S. HOPWOOD | F. C. PRIDHAM | T. E. A. STOWELL

**ASSISTANTS TO THE TEACHERS OF PRACTICAL SURGERY.**

H. G. COLE  
H. E. GOTELEE  
R. W. STOCKS

G. L. WEBB  
H. B. WHITEHOUSE



TERRACE VIEW.

*Printed by Adlard and Son,  
London and Dorking.*

TF6